

Regions and Regionalism in History

Peasants and Production in
the Medieval North-East

THE EVIDENCE FROM TITHES, 1270–1536

BEN DODDS

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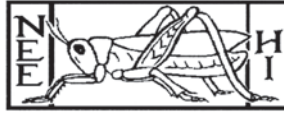
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PEASANTS AND PRODUCTION
IN THE MEDIEVAL NORTH-EAST

THE EVIDENCE FROM TITHES, 1270–1536

The peasant economy in north-east England, and indeed throughout the country as a whole, underwent many changes during the later middle ages, but owing to the lack of evidence it has been difficult to come to definite conclusions. This pioneering survey uses previously unexploited sources, principally from tithe data, to offer new interpretations of the patterns for change and the scope for adaptability. The author argues that the peasant economy in this region of England was profoundly affected by war in the early fourteenth century and then disease with the arrival of the Black Death in 1349, calling into question the orthodox theories of overpopulation in explaining the ‘crisis’ of the late middle ages: even at its medieval peak, the population of north-east England was sparse by comparison with areas further south. Nor did the availability of land and improved living standards lead to demographic recovery in the fifteenth and early sixteenth centuries. He also shows that despite their vulnerability to crises, peasant cultivators were highly responsive to change. Far from being primitive subsistence farmers oblivious to the market and its signals, medieval peasants in the Durham region were subtle and successful decision-makers regarding the production and marketing of their output.

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This series, published in association with the AHRB Centre for North-East England History (NEEHI), aims to reflect and encourage the increasing academic and popular interest in regions and regionalism in historical perspective. It also seeks to explore the complex historical antecedents of regionalism as it appears in a wide range of international contexts.

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IN THE MEDIEVAL NORTH-EAST

THE EVIDENCE FROM TITHES
1270–1536

BEN DODDS

THE BOYDELL PRESS

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Notes on Referencing

DCM = Durham Cathedral Muniments

The tithe data comprise more than 16,000 individual receipts, over 8,000 of which have been used in compiling the estimated arable output series, making referencing of each individual account impossible in the charting and discussion of trends. For this reason, individual accounts have only been referenced when mentioned specifically in the text. Otherwise, it is assumed in the text, graphs and tables that tithe data derive from the monastic office holder and manorial accounts in the DCM medieval accounting material. When accounts are referenced, an indication is given of the section of the account in which the reference is found for the accounts of the bursars, which are much longer than those of the other priory office holders. This is not necessary for the accounts of the other office holders which, in any case, were often divided only into receipts and expenses.

For lists of the Durham Priory accounting material, see A. J. Piper, 'Muniments of the Dean and Chapter of Durham: Medieval Accounting Material' (Durham University Library Archives and Special Collections searchroom handlist, 1995). Most of the information given in this handlist is available on the Durham University Library Archives and Special Collections webpages at <http://flambard.dur.ac.uk/dynaweb/handlist/ddc/dcdmaccs/> (viewed November 2006).

Price data have been used frequently and charted and tabulated. Whenever possible, north-eastern price data were used. These were collected from:

Boxes C1, C2, C3, C4, C5, C6, C7, C8(i) and C8(ii), Beveridge Price History Archive (British Library of Political and Economic Science).

For years when price data are not available, other series have been used (see list of sources below). This applies in particular to the pre-Black Death period when price data from the North-east are too scattered to create annual series. For the occasional years towards the end of the period when no price data survive in any of the sources listed, means were taken of the previous and following years' price data.

G. Clark, 'The Price History of English Agriculture, 1209–1914', available at <http://www.econ.ucdavis.edu/faculty/gclark/papers/Agprice.pdf> (viewed March 2006).

D. L. Farmer, 'Prices and Wages [up to 1350]', in *The Agrarian History of England and Wales*, 2: 1042–1350, ed. H. E. Hallam (Cambridge, 1988), pp. 716–817.

D. L. Farmer, 'Prices and Wages, 1350–1500', in *The Agrarian History of England and Wales*, 3: 1348–1500, ed. E. Miller (Cambridge, 1991), pp. 431–525.

J. E. T. Rogers, *A History of Agriculture and Prices in England from the Year after the Oxford Parliament 1259, to the Commencement of the Continental War, 1793*, 7 vols., vol. 4 (Oxford, 1866–1902).

Tithe and History

Little is known about the humbler inhabitants of the medieval countryside as individuals, although mentions in various types of document provide tantalising snippets of information. For example, nothing is known about the fate of Preciosa, the daughter of the vicar of Kirk Merrington, who was fined 6d. for fornication in the early 1330s.¹ Her life was almost certainly very different from that of the respectable (as far as is known) widow of Thomas Strangeways, leaseholder of the manor of Newton Ketton in 1495–6, whose rent was paid and land presumably farmed by other family members.² Some peasants were fortunate, such as William Coatham who worked on the manorial demesne at Pitlington during a period of rapidly increasing wages around the turn of the fifteenth century.³ Others were not, such as William Miller whose lands were taken off him by the Durham monks around 1300 because he was not capable of maintaining his holding and the buildings were burned and ruined.⁴ Yet all these individuals, and many thousands like them whose lives escaped mention in documentary sources, lived in agricultural communities. Most were involved more or less directly in farming activities. In order to understand the lives of these people it is necessary to study the fruits of their labours on the land.

This study is based on tithe records, a source of data hitherto little exploited by historians of medieval England. The tithe was an ecclesiastical tax levied at a rate of approximately one-tenth on all types of production. If the quantities received as tithes from one year to the next are known, then estimates of changing total production levels can be extrapolated. Given the unfamiliarity of the source material used for this study, some consideration of what tithe data have to offer is required. Tithe records have already been used extensively as a source for data on production levels by historians of continental Europe and the first section of this chapter examines this historiography, showing the reasons why French historians in particular turned to this source. The second section looks at the potential pitfalls of tithe as a source for data on production and examines why it was not taken up by historians of England. In the final section, the focus is shifted from

¹ *Halmota Prioratus Dunelmensis: 1*, ed. W. H. D. Longstaffe and J. Booth (Surtees Society 82, 1889), p. 13; *The Victoria History of the County of Durham: 2*, ed. W. Page (London, 1907), p. 191.

² *Durham Cathedral Priory Rentals, 1: Bursar's Rentals*, ed. R. A. Lomas and A. J. Piper (Surtees Society 198, 1986), p. 170.

³ B. Dodds, 'Peasants, Landlords and Production between the Tyne and Tees, 1349–1450', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), pp. 189–90.

⁴ *Halmota*, ed. Longstaffe and Booth, p. 12; *The Victoria History of the County of Durham 2*, ed. Page, p. 200.

historiography and method to interpretation, as the potential of work on English tithe data to shed light on the history of those who worked the land in the middle ages is assessed.

Tithe and the *conjoncture*

Dozens of studies were conducted on tithe data during the 1960s and the 1970s by the historians sometimes collectively referred to as the *Annales* school. A consideration of this work is helpful in establishing the usefulness of tithe records as a source. The pivotal work in this historiographical tradition is Braudel's *La Méditerranée et le Monde Méditerranéen à l'Époque de Philippe II*, published in 1949.⁵ Although it began life as a doctoral project on traditional narrative-based diplomatic history, Braudel's contact with Febvre turned it into a groundbreaking study. Febvre, along with his University of Strasbourg colleague Bloch, believed the future of historical research lay in the collaboration between historians and those working in neighbouring disciplines and in transcending the narrow specialisms to which traditional historians clung. In 1929 they founded a journal, *Annales d'Histoire Économique et Sociale*, to promote this agenda.⁶

La Méditerranée became a radical expression of this emerging tradition. The idea of a history of the Mediterranean policy of Philip II had been left far behind and Braudel attempted to look beyond historical events and to write a history of the sea itself, 'the greatest document of its past existence'.⁷ In order to develop this much wider approach, Braudel divided history into three types of time. The first was the slowest moving and most fundamental. It constituted the physical and psychological space within which history ran its course, including the characteristics of the landscape, the climate, the vegetation and the attitudes of the people. The second moved more quickly, in cycles of ten, twenty or fifty years. It was made up of long-term patterns of change in economies and societies. The third was the fastest moving and represented the daily actions of kings and princes, politicians and soldiers.⁸ The three types of time, which became paradigmatic for historians associated with Braudel and the journal *Annales*, are normally referred to as *structure*, *conjoncture* and *événements*.

La Méditerranée was a powerful synthesis of decades of archival research and a compelling embodiment of recent historiographical trends. Yet Braudel was an equally powerful director of other people's research, promoting his views and methods from his position close to and then at the centre of the academic historical world in Paris after the Second World War. When Febvre died in 1956

⁵ F. Braudel, *La Méditerranée et le Monde Méditerranéen à l'Époque de Philippe II* (Paris, 1949). Only the second edition of *La Méditerranée* was translated into English: F. Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II*, trans. S. Reynolds (London, 1975). This edition has been used in footnotes here unless reference is made to a difference between the first and second editions.

⁶ Braudel, *The Mediterranean*, p. 19. J. H. Hexter, 'Fernand Braudel and the *Monde Braudellien*', *Journal of Modern History* 44 (1972), 512; P. Daix, *Braudel* (Paris, 1995), p. 79; M. Bloch and L. Febvre, 'A Nos Lecteurs', *Annales d'Histoire Économique et Sociale* 1 (1929); T. Stoianovich, *French Historical Method: the 'Annales' Paradigm* (Ithaca and London, 1976), p. 11.

⁷ Braudel, *The Mediterranean*, p. 17.

⁸ *Ibid.*

Braudel succeeded him as president of the VI^e section of the École Pratique des Hautes Études and as editor of *Annales*. The VI^e Section, which had been founded in 1947, encouraged the emerging collaboration between historians and other social scientists. One particularly important aspect of this collaboration was the use of economic data by historians, already pioneered in the work on prices by Simiand and Labrousse.⁹ In Braudelian terms, economic data series were the basis for the study of the *conjoncture*. Although an interpretation of price history was an important part of *La Méditerranée*, the first edition contains very few tables and no graphs and Braudel himself was aware of the need for more quantitative analysis.¹⁰

Critical responses to *La Méditerranée* went further than a demand for more data, however. Braudel's conception of the Mediterranean as an economic unit was based on the history of commerce and money but traded items only represent a proportion of the goods produced and Marxists, in particular, criticised the neglect of production.¹¹ Braudel himself remarked in 1958 on the need for the study of production for an understanding of the *conjoncture*.¹² Two years later another doctoral student, called Baehrel, made a vigorous attempt to supply this need. Braudel had observed the rise in prices in the Mediterranean during the sixteenth century and the onset of currency crisis in the early seventeenth but Baehrel demonstrated that production continued to expand until c. 1680.¹³ Money supply and international commerce at Marseilles only tell part of the story: wider changes were taking place in the countryside.¹⁴ Baehrel used tithe records as a source of production data and in this way the *Annaliste* tithe study was born. However, it would be unfair to allow Baehrel all the credit for beginning work on tithe data. The source had, in fact, been used six years earlier by a Spanish scholar working on Armuña in Castile although it is not clear if Baehrel was aware of this work.¹⁵

Baehrel's pioneering work on production indicators was quickly followed up and a remarkable phase of research on tithe data began, amounting to nothing

⁹ F. Simiand, *Les Fluctuations Économiques à Longue Période et la Crise Mondiale* (Paris, 1932); C. E. Labrousse, *Esquisse du Mouvement des Prix et des Revenus en France au XVIII^e Siècle* (Paris, 1933). Simiand's original 1903 paper, published in the *Revue de Synthèse Historique* in 1903, was reprinted as: F. Simiand, 'Méthode Historique et Science Sociale', *Annales ESC* 15 (1960).

¹⁰ Braudel, *La Méditerranée*, pp. 361–420; F. Braudel, 'Histoire et Sciences Sociales: La Longue Durée', *Annales ESC* 13 (1958), 730, 752. For the origins of 'serialist' history see Stoianovich, *French Historical Method*, pp. 194–9; E. Le Roy Ladurie, 'The Quantitative Revolution and French Historians: Record of a Generation (1932–1968)', in *The Territory of the Historian*, ed. E. Le Roy Ladurie (Hassocks, Sussex, 1979); E. Le Roy Ladurie, 'Quantitative History: the 6th Section of the École Pratique des Hautes Études', in *The Territory of the Historian*, ed. E. Le Roy Ladurie.

¹¹ Stoianovich, *French Historical Method*, pp. 66–7.

¹² Braudel, 'Histoire et Sciences Sociales: La Longue Durée', 727.

¹³ Braudel, *The Mediterranean*, pp. 517–42; R. Baehrel, *Une Croissance: La Basse-Provence Rurale, Fin XVI^e Siècle – 1789* (Paris, 1961), pp. 41–6, 83–92. For a useful commentary on the significance of Baehrel's work, see E. Le Roy Ladurie, 'Voies Nouvelles Pour l'Histoire Rurale (XVI^e–XVIII^e Siècles)', *Annales ESC* 20 (1965).

¹⁴ Stoianovich, *French Historical Method*, p. 68; Le Roy Ladurie, 'Quantitative History', p. 23.

¹⁵ A. Cabo Alonso, 'La Armuña y Su Evolución Económica', *Estudios Geográficos* 58 and 59 (1955), 97–122, 367–83. Baehrel does not reference his tithe method. He also seems to have been preceded by I. N. Kiss who published a selection of Hungarian tithe registers in 1960: N. Kiss, *16. Századi Dézsmajegyzékek [Sixteenth-Century Tithe Registers]* (Budapest, 1960).

short of a tithe craze.¹⁶ In October 1963 the Commission d'Histoire Moderne et Contemporaine of the Centre National de la Recherche Scientifique (CNRS), an organisation which allocated government funds for research, declared that work on production under the *ancien régime* should be undertaken.¹⁷ A discussion group was established at the VIe Section around the theme of 'agricultural production and productivity' and formed a strand at the International Economic History Conference held at Munich in 1965.¹⁸ In the following year, work on tithe records was spurred on by another seminal doctoral thesis, that of Le Roy Ladurie. It was a study of the Languedoc constructed within a Braudelian framework of *structure* and *conjoncture* but with a very extensive discussion of agricultural production. Le Roy Ladurie deployed and developed the method of using tithe data as indicators of production pioneered by Baehrel.¹⁹ Also in 1966, the Association Française des Historiens Économistes followed up the recommendation made by the CNRS in 1963 and gave the VIe Section the job of studying *ancien régime* production using tithe data. In January 1969 the Association met to discuss the first results of this survey and the proceedings of this conference were published in 1972.²⁰

Important though the VIe Section and the *Annales* were in the encouragement of work on tithe records, it was also driven by Labrousse, professor of social and economic history at the Sorbonne, who was on the edge of this circle. It had been his advice which had prompted the CNRS recommendation in 1963 and it was he who carried the initiative following the 1969 conference. This was achieved partly through a major conference on historical methodology held at the University of Santiago de Compostela in April 1973. Labrousse presided over a strand on 'Rural history in the modern era' which incorporated five papers by Spanish scholars on tithe data as indicators of production.²¹ With this new international impetus, a further survey was launched from Paris on peasant dues, tithes and changes in production in pre-industrial societies funded by a collection of French governmental and academic institutions. More than fifty researchers met in Paris in 1977 for a preparatory meeting in advance of the Seventh International Economic History Congress which was held in Edinburgh the following year.²² On the request of the supervisors of the Paris project, Van der Wee and

¹⁶ For a description of the French projects on tithe data of the 1960s and 1970s see E. Le Roy Ladurie and J. Goy, *Tithe and Agrarian History from the Fourteenth to the Nineteenth Centuries: an Essay in Comparative History*, trans. S. Burke (Cambridge and Paris, 1982), pp. 3–6.

¹⁷ E. Le Roy Ladurie and J. Goy, 'Présentation', in *Les Fluctuations du Produit de la Dîme: Conjoncture Décimale et Domaniale de la Fin du Moyen Âge au XVIIIe Siècle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1972), p. 9.

¹⁸ *2 Production et Productivité Agricoles: IIIe Conférence Internationale d'Histoire Économique (Munich, 1965)*, ed. J. Meuvret (Congrès et Colloques 10, 1968).

¹⁹ E. Le Roy Ladurie, *The Peasants of Languedoc*, trans. J. Day (Urbana, 1974). Originally published in 1966 as E. Le Roy Ladurie, *Les Paysans de Languedoc* (Paris, 1966). The English version must be used with caution because substantial cuts were made by the translator and editor.

²⁰ *Les Fluctuations du Produit de la Dîme*, ed. Goy and Le Roy Ladurie, pp. 9–10.

²¹ *Actas de las I Jornadas de Metodología Aplicada de las Ciencias Históricas; Metodología de la Historia Moderna: Economía y Demografía*, ed. A. Eiras Roel (Santiago de Compostela, 1975), p. 10.

²² J. Goy, 'Report. Part I', in *Proceedings of the Seventh International Economic History Congress*, ed. M. Flinn (Edinburgh, 1978). The proceedings of the preparatory colloquium were subsequently

Van Cauwenberghe launched a parallel survey looking at similar sources from the Low Countries.²³

The work presented in Paris in 1977 and Edinburgh in 1978 gives an impression of the intensity and geographical diversity of research on tithe data. Dozens of studies were brought together, many from France and western European countries but also from elsewhere. From eastern Europe, Makkai and Zimanyi contributed a paper on Hungary where tithe receipts survive from as early as 1291–4. They also pioneered the use of modern technology by collecting around eighty thousand tithe receipts on computer. Material came from the New World as well as the Old. Morin presented a paper on agricultural production calculated using the tithes imposed by the Spanish in Mexico and Paquet and Wollot published their research on eighteenth- and nineteenth-century tithe data from Quebec.²⁴

‘Une illusion’?

Huge amounts of money were invested in the French tithe projects which involved the collaboration of dozens of researchers. Tithe data were fundamental to current historical thinking. There was great faith that historians would be able to develop some kind of standardized method and it was envisaged that a central databank might be created in which tithe data could be stored and then manipulated to calculate national averages.²⁵ Yet by the early 1980s, the great continental European phase of work on tithe records had come to an end and scholarly attention was directed elsewhere.

One reason for this is a shift in interest among the *Annales* scholars, amounting in some quarters to a reaction against quantitative history. Some, such as Le Roy Ladurie, had been able to deploy quantitative data in developing wide-ranging explanatory frameworks. Others were less willing to synthesise and extrapolate in this way and for them, in the words of Hunt, the ‘collection of serial data ... seemed to constitute an end in itself’.²⁶ Braudel has been criticised for treating statistics as a ‘loose but charming mistress’ but he too was aware of the danger that methodology could take precedence over interpretation.²⁷ His doubts surfaced as early as 1963 in a ‘critical note’ published on the Chaunus’ *Seville*

published in their own right as *Prestations Paysannes, Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1982).

²³ H. Van der Wee and E. Van Cauwenberghe, *Productivity of Land and Agricultural Innovation in the Low Countries (1250–1800)* (Leuven, 1978).

²⁴ L. Makkai et al., ‘Les Registres de Dîme, Sources de l'Histoire de la Production Agricole en Hongrie, 1500–1848’, in *Prestations Paysannes*, ed. Goy and Le Roy Ladurie; C. Morin, ‘Le Mouvement du Produit Décimal et l'Évolution des Rapports Fonciers au Mexique, XVIIe–XIX Siècles’, in *ibid.*; G. Paquet and J.-P. Wallot, ‘Rentés Foncières, Dîmes et Revenus Paysans. Le Cas Canadien.’ in *ibid.*

²⁵ E. Le Roy Ladurie, ‘Tithes and Net Agricultural Output (Fifteenth to Eighteenth Century)’, in *The Territory of the Historian*, ed. Le Roy Ladurie, pp. 193–6.

²⁶ L. Hunt, ‘French History in the Last Twenty Years: the Rise and Fall of the *Annales* Paradigm’, *Journal of Contemporary History* 21 (1986), 213. Desaive made reference to these concerns specifically directed at studies of tithe in his ‘Comptes rendus’ at the end of the published proceedings of the international tithe survey: J.-P. Desaive, ‘Comptes Rendus des Séances et Débats’, in *Prestations Paysannes*, ed. Goy and Le Roy Ladurie, p. 782.

²⁷ Hexter, ‘Fernand Braudel and the *Monde Braudellien*’, 515–16.

et l'Atlantique. This work consists of two thousand pages of tables and data, supplemented by a much slimmer interpretative volume.²⁸ Although Braudel applauded the collection of quantitative data as 'certainly tedious, and equally certainly necessary', he berated the Chaunus for their failure to see the relationship between the *conjoncture* and the *structure*. Not enough attempt had been made to understand the significance of the data series.²⁹

A shift in interest away from the economic *conjoncture* became more evident during the 1970s. Scholars drew increasingly heavily on qualitative information and on the work of anthropologists.³⁰ Following the completion of the international survey of peasant dues and the publication of the final monographs drawing on tithe data, interest in this type of history died out almost completely in France, as Béaur explained at the end of the 1990s:³¹

Land productivity is no longer fashionable. The decay of economic history, the disarray of rural history, the mistrust of what we call quantitative history and more generally of numbers and statistics, could easily explain this neglect.³²

Nor has the 1960s and 1970s faith in the validity of the use of tithe data always been maintained by more recent historians. Derville has described the reliance on tithes as indicators of production as 'une illusion'.³³ Tithe receipts are by definition related to production levels but the nature of this relationship is not always clear. The difficulties fall into three categories: the rate at which tithe was levied, the extent of non-payment of tithe and how to interpret records of tithes sold for cash.

Detailed investigation of medieval and early modern France revealed a bewildering diversity of rates at which tithe was levied. In his study of the Auvergne from the fifteenth to eighteenth century, for example, Charbonnier found some tithes levied at a rate of one in eleven and others at a rate of one in twenty-one along with a series of different renders, at various rates, which sometimes included tithe.³⁴ The use of data from tithe receipts as indicators of agricultural production relies upon the assumption that a change in the quantity of produce

²⁸ H. Chaunu and P. Chaunu, *Séville et l'Atlantique, 1504–1650* (Paris, 1955).

²⁹ Originally a 'critical note' in *Annales ESC* 1963, reprinted and translated in F. Braudel, 'Toward a Serial History: Seville and the Atlantic, 1504–1650', in *The Annales School: Critical Assessments*, ed. S. Clark (London, 1999), pp. 266–70.

³⁰ C. Lucas, 'Introduction', in *The Annales School*, ed. Clark, p. 234.

³¹ *Prestations Paysannes*, ed. Goy and Le Roy Ladurie; G. Bois, *Crise du Féodalisme: Économie Rurale et Démographie en Normandie Orientale du Début du XIV^e Siècle au Milieu du XVI^e Siècle* (Paris, 1976); H. Neveux, *Les Grains du Cambrésis (Fin du XIV^e–Début du XVII^e Siècles). Vie et Déclin d'une Structure Économique* (Paris, 1980).

³² G. Béaur, 'From the North Sea to Berry and Lorraine: Land Productivity in Northern France, 13th – 19th Centuries', in *Land Productivity and Agro-Systems in the North Sea Area (Middle Ages – 20th Century): Elements for Comparison*, ed. B. J. P. van Bavel and E. Thoen (Turnhout, 1999), p. 138.

³³ A. Derville, *L'Agriculture du Nord au Moyen Âge: Artois, Cambrésis, Flandre Wallonne* (Villeneuve 'Ascq, 1999), p. 200. For other recent comments see Béaur, 'From the North Sea to Berry and Lorraine', p. 139. A recent exception to the disillusionment with tithe as an indicator of levels of production and productivity is L. Leijonhufvud, *Grain Tithes and Manorial Yields in Early Modern Sweden: Trends and Patterns of Production and Productivity, c. 1540–1680* (Uppsala, 2001).

³⁴ P. Charbonnier, 'Les Dîmes Auvergnates du X^e au XVIII^e Siècle', in *Les Fluctuations du Produit de la Dîme*, ed. Goy and Le Roy Ladurie, pp. 180–213.

received as tithe represents a change in total production. Clearly, any shifts in the rate at which tithe was levied threaten this basic premise.

The assumption that changes in tithe receipts reflect changes in production levels is also threatened by tithe fraud. Peasants in Dryden's *King Arthur* of 1691 sing the following:

We ha' cheated the Parson, we'll cheat him agen;
For why shou'd a Blockhead ha' One in Ten?³⁵

There is no reason to assume tithe payers of earlier centuries would have taken a different attitude. Many sources indicate the varied schemes which those subject to tithe adopted in order to avoid payment. Sometimes, for example, the other nine sheaves were removed before the collector came for his tenth, leaving him suspicious that he was receiving smaller sheaves composed of inferior corn.³⁶ This raises the possibility that changing levels of tithe receipts were related not to changing levels of production but rather to changing levels of tithe fraud. These were the grounds for criticisms levelled by Morineau at Neveux' work on Cambrésis tithe records.³⁷ The problem, of course, is that, like any clandestine activity, the level of tithe fraud is rarely directly quantifiable. The most serious attempt to do so is that by Lorcin who looked at the issue across five centuries in the Lyonnais. She discovered considerable changes in the scale of tithe fraud which were related to factors such as outbreaks of local conflict.³⁸ This is worrying for the historian hoping to make use of tithe data as indicators of production levels.

The aspect of the method of using tithe records which was most controversial during the 1960s and 1970s was the use of production estimates based on tithes sold for cash. Tithe owners sometimes found it was expedient to sell tithes for cash to avoid the effort and expense of collection and processing. Sales were sometimes made on an annual basis, as Ruwet found in a sample of accounts from the cathedral of Saint-Lambert in Liège during the late seventeenth and eighteenth centuries. Equally, tithes might be leased for longer periods, as Ruwet found in a sample from the same records from the sixteenth and earlier seventeenth centuries.³⁹ Baehrel and Le Roy Ladurie had been the first to develop a method by which receipts from sold corn tithes were deflated by price to estimate grain production. Expressed in Baehrel's terms, if the value of the sold tithe increased more rapidly than grain prices then an increase in production might be assumed.⁴⁰

³⁵ J. Dryden, *King Arthur*, ed. V. A. Dearing, vol. 16, *The Works of John Dryden* (Berkeley, 1996), p. 62. I owe this reference to Professor Paul Harvey.

³⁶ N. J. G. Pounds, *A History of the English Parish: the Culture of Religion from Augustine to Victoria* (Cambridge, 2000), p. 58; A. Wharam, 'Tithes in Country Life', *History Today* 22 (1972), 428; M.-T. Lorcin, 'La Fraude des Décimables: Mouvement Court ou Mouvement Long?' in *Prestations Paysannes*, ed. Goy and Le Roy Ladurie, pp. 602, 603.

³⁷ M. Morineau, 'Cambrésis et Hainaut: des Frères Ennemis?' in *Prestations Paysannes*, ed. Goy and Le Roy Ladurie, p. 635.

³⁸ Lorcin, 'La Fraude'.

³⁹ J. Ruwet, 'La Mesure de la Production Agricole Sous l'Ancien Régime: le Blé en Pays Mosan', *Annales ESC* 4 (1964).

⁴⁰ Baehrel, *Une Croissance*, p. 5.

This deceptively simple solution by which sold corn tithes could be converted into grain production estimates belies a multitude of difficulties. The sum paid by the tithe purchaser was not equal to the sale value of the grain collected as tithe. The purchaser would expect a discount on the value of the grain because of the expense of tithe collection and processing. Not only would he have to collect the tithe as corn standing in the fields but he would also have to thresh and winnow the corn to produce grain for consumption or sale. The buyer would only take part in the transaction if it was beneficial to him and would therefore expect to make a profit on the sale of the grain, meaning the sale price of the tithe corn would have to be further discounted. The cost of labour, and therefore tithe collection and processing, changed over time as did the level of demand among tithe purchasers. The size of the discounts for collection, processing and buyer's profit is nearly always unknown to the historian.

These problems mean the relationship between tithe receipt data and production is complicated but they do not render the source useless. The *Annaliste* tithe historians were well aware of the care they needed to exercise and there was much discussion and debate about the development of appropriate methods.⁴¹ Ways in which these problems can be avoided, or the impact of unknown quantities tested, are discussed in chapter 2.

Whatever the potential and the pitfalls of the source, British historians remained detached from the French tithe craze. Kain was the only British contributor to discuss tithe evidence at the 1977 colloquium and he commented that the British neglect of tithe data was 'regrettable'.⁴² Historians of England had worked on tithe surveys of the eighteenth and nineteenth centuries but there had been little interest in the type of 'serial' history carried out in continental Europe.⁴³ Kain suggested that the types of records surviving in England have prevented the use of tithe receipts as indicators of agricultural output in this country.⁴⁴ This idea is quickly dispelled by a search through English archives. Large numbers of rectories were appropriated to religious corporations in England between the thirteenth and fifteenth centuries and it is in surviving accounts from these organizations that records of receipts from tithes are to be found. The lack of British work on medieval tithe data is ironic since the earliest mention so far discovered of the potential of this source for research on peasant agriculture appears in a 1935 book review by Lennard, Reader in Economic History at the University of Oxford at the time.⁴⁵

There was considerable hostility to the quantitative history approach of the

⁴¹ B. Dodds, 'Estimating Arable Output Using Durham Priory Tithe Receipts, 1341–1450', *Economic History Review* 57 (2004); Desaive, 'Comptes Rendus des Séances et Débats', p. 785; Goy, 'Report. Part I', p. 114.

⁴² R. Kain, 'Les Dîmes, Les Relevés de Dîmes et la Mesure de la Production Agricole Dans La Grande-Bretagne Préindustrielle', in *Prestations Paysannes*, ed. Le Roy Ladurie and Goy, p. 726.

⁴³ J. H. Clapham, 'Tithe Surveys as a Source of Agrarian History', *Cambridge Historical Journal* 2 (1924), 201–8; H. C. Prince, 'The Tithe Surveys of the Mid-Nineteenth Century', *Agricultural History Review* 7 (1959); E. A. Cox and B. R. Dittmer, 'The Tithe Files of the Mid-Nineteenth Century', *Agricultural History Review* 13 (1965); R. J. P. Kain and H. C. Prince, *The Tithe Surveys of England and Wales* (Cambridge, 1985); E. J. Evans, *The Contentious Tithe: the Tithe Problem and English Agriculture, 1750–1850* (London, 1976).

⁴⁴ Kain, 'Les Dîmes', p. 713.

⁴⁵ R. V. Lennard, 'Review of F. M. Page, "The Estates of Crowland Abbey"', *Economic History* (a

Annales school among some British historians. Cobb sounded off in 1971 against ‘the dark mechanized forces of the Social Sciences, the Armies of the Night’ and raged against the abandonment of the individual by historians.⁴⁶ However, these views were not representative of everyone engaged in historical research in Britain. Crossick responded to Cobb’s diatribe by giving many British examples of the use of quantitative data, a ‘well-established aspect of historical research’.⁴⁷ It is true that at the end of the 1940s British economic historians were slow to pick up on the significance of work being published in Paris.⁴⁸ No full review of *La Méditerranée* appeared in the *Economic History Review*, for example.⁴⁹ Later, however, it became common for economic historians from the VIe Section to review each others’ work in this journal.⁵⁰ British historians also published increasing numbers of articles in *Annales* and they received Le Roy Ladurie’s study of the Languedoc very favourably. Hilton thought it was ‘remarkable’ and ‘most original’ whilst Thirsk considered it ‘a most exciting and stimulating study’ and welcomed the publication of more work on tithe records.⁵¹

British economic historians were used to drawing on the theories and models of social scientists in just the way advocated by the *Annales* school. Indeed, some thought they did so more comprehensively and effectively. In reviewing a translated collection of Le Roy Ladurie’s articles, Jones described the French approach as quantitative ‘only in the data-processing sense – tests of statistical significance do not seem to be applied to the results and history is something to be read off by eye from the curves of the graph’.⁵²

At least as far as the English medieval economy is concerned, the real reason for historians’ neglect of tithe records is not a lack of data, nor disapproval of quantitative history, but rather the abundance of other excellent sources, the most important of which are the accounts drawn up by managers of manorial demesnes. Demesne land was part of a manor which the lord reserved for his own use. In many cases, lords simply leased out their demesnes to tenants. However, it was also common for them to manage demesne land through their own agents, consuming or selling the output. The documents produced by the managers of lords’ demesne land, known as manorial accounts, record, often in great detail, the income and expenditure on these enterprises.⁵³ The system of direct manage-

supplement to the *Economic Journal*) 3 (1935). I am grateful to Dr Chris Briggs for bringing this review to my attention.

⁴⁶ R. Cobb, ‘Historians in White Coats’, *The Times Literary Supplement*, 3 December 1971.

⁴⁷ G. Crossick, *The Times Literary Supplement*, 17 December 1971.

⁴⁸ P. Burke, ‘Reflections on the Historical Revolution in France: the *Annales* School and British Social History’, in *The Annales School*, ed. Clark (London, 1999).

⁴⁹ *Ibid.*, p. 284. It was mentioned, and described as a ‘masterly work’, in P. Leuilliot, ‘Recent French Writings on the Social and Economic History of Modern France’, *Economic History Review* 2 (1949), 203.

⁵⁰ E.g. P. Goubert, ‘Review of R. Baehrel “Une Croissance ...”’, *Economic History Review* 15 (1962–3); F. Mauro, ‘Review of P. Goubert “Beauvais et le Beauvaisis”’, *Economic History Review* 14 (1961–2); J. Jacquart, ‘Review of E. Le Roy Ladurie “Les Paysans ...”’, *Economic History Review* 20 (1967).

⁵¹ R. H. Hilton, ‘Review of E. Le Roy Ladurie “Les Paysans ...”’, *Economic History Review* 82 (1967); J. Thirsk, ‘Review of E. Le Roy Ladurie “Les Paysans ...”’, *Agricultural History Review* 19 (1971).

⁵² E. L. Jones, ‘Review of E. Le Roy Ladurie “Territory of the Historian”’, *Economic History Review* 32 (1979).

⁵³ For examples and discussion of manorial accounts, see *The English Manor, c. 1200 – c. 1500*, ed. M. Bailey (Manchester Medieval Sources, 2002), pp. 97–166.

ment of demesne lands by the lords' officials, and with it the tradition of keeping manorial accounts, did not develop in other countries to the extent that it did in England since manorial demesnes were often leased much earlier.⁵⁴ This difference in the history of rural estate management in England has provided historians of English agriculture with a unique body of source material but has led to the relative neglect of sources common to other countries such as tithe records.

Peasant *mentalités*

The contribution that tithe data can make to an understanding of pre-industrial rural economies can be demonstrated by an examination of the conclusions reached by continental European historians using tithe data. The significance of Baehrel's use of tithe records in relation to Braudel's *La Méditerranée* has already been discussed but the conclusions reached by later tithe historians were equally fundamental in the development of the work of the *Annales* school. For the famous Braudelian tripartite division of time to lead to an understanding of historical change, the historian must seek to understand the relationship between *structure*, *conjoncture* and *événements*. This was Braudel's aim in *La Méditerranée* but, following its publication, historians were aware of the need for further integration. In an article published at the end of the 1950s, Braudel discussed the potential of work on economic indicators, one aspect of the *conjoncture*, and their relationship to the enduring geographical and psychological features of a period, or the *structure*. He described the need to study economic crises and cycles and, in so doing, to look for the ways of thought and semi-permanent patterns of activity which they reveal.⁵⁵

In his study of the Languedoc, Le Roy Ladurie followed this advice and built up a picture of the mechanisms by which pre-industrial society functioned. He examined the economic indicators, including tithe data, and described what he termed the 'great agrarian cycle'. This is a Malthusian cycle in which population only rose until the limits in the expansion of food supply were reached.⁵⁶ Resources were abundant in mid-fifteenth-century Languedoc because of the demographic impact of late medieval plagues. This meant that population expanded rapidly but, as early as 1530, resources began to be strained: levels of production could not keep pace with the increase in the number of mouths to be fed. As the limits of production were reached, between 1570 and 1650, population increase also ceased. From around 1680, production began a slow decline which lasted until the second or third decade of the eighteenth century.

From this description of economic and demographic trends Le Roy Ladurie moved to a study of more permanent structural features. The tithe data showed that pre-industrial society in the Languedoc, in accordance with Malthusian principles, was marked by clear limits in its capacity to produce. Low average yields

⁵⁴ C. M. Cipolla, *Before the Industrial Revolution: European Society and Economy 1000–1700* (London, 1993), p. 94; A. MacKay, *Spain in the Middle Ages: From Frontier to Empire, 1000–1500* (London, 1977), pp. 71–2.

⁵⁵ Braudel, 'Histoire et Sciences Sociales: La Longue Durée', 733.

⁵⁶ T. R. Malthus: *an Essay on the Principle of Population*, ed. G. Gilbert (Oxford World's Classics, 1993).

remained at the same level from the fifteenth to the eighteenth century. Le Roy Ladurie described this as a 'technological impasse' which he sought to explain in terms of 'cultural stumbling blocks'. No improvements were made in yields because people's energy was 'dissipated wholesale in the fire and flame of religious struggle'. He took this explanation even further and tried to look underneath this obsession with religious conflict by probing 'the farthest reaches of the unconscious psyche'. Moving from farming to Freud, Le Roy Ladurie identified 'extremely well-characterized anxieties, impulses and fantasies' which he thought explained producers' priorities and attitudes to the world. In this way, a study of the economic *conjoncture* led to an analysis of the features of the *structure* of pre-industrial society.⁵⁷

In other words, for Le Roy Ladurie, producers were locked into the pre-industrial Malthusian cycle, defined by a ceiling on productive capacity, because of their outlook on life or, in the terms of the *Annales* school, their *mentalités*. Peasant cultivators did not lack ability or agency but they were simply not interested in improving the productivity of the land. To them, religious matters were of much greater importance. Le Roy Ladurie's conclusions owe much to the anthropological tradition within the *Annales*, the origins of which stretch back to the work of the founders of the school, Bloch and Febvre. For example, Febvre had drawn on the work of the anthropologist Lévy-Bruhl to define the limits in the *mentalités* of early-modern people.⁵⁸ Work on tithe data and changes in production admitted historians to the psychological world of different social groups in pre-industrial societies.⁵⁹

Le Roy Ladurie thought that the attitudes of the peasantry formed part of the *structure*, that is the slowest changing and most fundamental type of history. To him, peasant 'development is a non-development': peasant ways of thinking, and population rise and fall, mean any changes in the rural society and economy are cyclical.⁶⁰ In his later study of the early-fourteenth-century peasants of Montaignou, a village in the Pyrenees, Le Roy Ladurie found evidence for the same attitudes he had attributed to peasants in the Languedoc in the fifteenth to eighteenth centuries. The poorer inhabitants of Montaignou might dream of managing an estate which they did not have to work with their own hands, and they certainly assumed land would be managed efficiently. However, according to Le Roy Ladurie at least, their real interests lay in other spheres of life. They 'were fond of having a nap, of taking it easy, of delousing one another in the sun or by the fire' and they had deep interests in religious matters far removed from the concerns of managing their holdings.⁶¹ The implication of the work on Montaignou and the Languedoc is that peasant psychology formed a constant structural feature of pre-industrial economies.

⁵⁷ Le Roy Ladurie, *The Peasants of Languedoc*, pp. 289–311.

⁵⁸ Burke, 'Reflections on the Historical Revolution in France'; L. Febvre, *The Problem of Unbelief in the Sixteenth Century: the Religion of Rabelais*, trans. B. Gottlieb (Cambridge, Mass., 1982), p. 6.

⁵⁹ These aspirations were expressed by Le Roy Ladurie in an article published in *Le Monde* in January 1969 and reprinted in Le Roy Ladurie, 'Quantitative Revolution'.

⁶⁰ E. Le Roy Ladurie, 'Peasants', in *The New Cambridge Modern History*, 13: *Companion Volume*, ed. P. Burke (Cambridge, 1979), pp. 116, 126.

⁶¹ E. Le Roy Ladurie, *Montaignou: Cathars and Catholics in a French Village, 1294–1324*, trans. B. Bray (Harmondsworth, 1980), pp. 335–41.

Traces of the same 'cultural stumbling blocks', of some kind of structural psychology which defines decision-making, can sometimes be found in work on the English peasantry. In his study of Wigston Magna (Leicestershire) in the early modern period, for example, Hoskins thought the smallness of the surpluses produced for sale was characteristic of the 'true peasant economy' and was inspired to quote Matthew Arnold on the subject:

the unchanging traditional life of the peasant system flowed on uninterrupted like a deep, underground river 'with noiseless current strong, obscure, deep'.⁶²

In fact, however, these ideas have not been prominent in the history of the medieval English peasantry. Far from emphasising the timelessness of the peasant economy, a number of medieval historians have drawn attention to important changes. In his discussion of rising wages after the Black Death, for example, Hatcher has argued that wage-earners in the countryside probably did not always cut back the number of hours worked but rather raised their total income to meet new consumer demands.⁶³ Whittle has observed the importance of permanent changes in peasants' relationship with the market at the end of the middle ages.⁶⁴ Nor has an attempt been made to psychoanalyse the English medieval peasant, attributing his decision-making to his fantasies and anxieties.

Instead of identifying restraints on production levels caused by the attitudes of peasant producers, Anglo-American historians have tended to emphasise the material difficulties they faced. The difference between the managers of manorial demesnes, or the tenants of very large holdings, and peasant producers has been regarded as crucial here. Britnell has contrasted the larger producers who 'could afford the luxury of an entrepreneurial frame of mind' and those with smaller holdings for whom 'sale of produce was often detrimental to their consumption and investment'. Peasants produced primarily to meet their own subsistence needs and many had holdings scarcely large enough to permit voluntary sales. They marketed produce not as entrepreneurs, with an eye on profit, but rather because the payment of rents and dues left them no option.⁶⁵ If the demands upon them were reduced, then there was no need to produce a marketable surplus. Under extreme circumstances, those with very small plots of land might even have responded to favourable economic conditions by curtailing production. So back-breaking was the intensiveness with which they had to cultivate their meagre strips of land simply to remain afloat economically that, when prices were high and more was received for each unit of output, they might have relaxed their efforts slightly and cut back production.⁶⁶ In the end, of course, both the

⁶² W. G. Hoskins, *The Midland Peasant: the Economic and Social History of a Leicestershire Village* (London, 1957), pp. 175–8.

⁶³ J. Hatcher, 'England in the Aftermath of the Black Death', *Past and Present* 144 (1994), 28, 33.

⁶⁴ J. Whittle, *The Development of Agrarian Capitalism: Land and Labour in Norfolk, 1440–1580* (Oxford, 2000), p. 309.

⁶⁵ R. H. Britnell, *The Commercialisation of English Society, 1000–1500* (Manchester, 1996), pp. 121–3.

⁶⁶ M. M. Postan, 'Medieval Agrarian Society in its Prime: 7. England', in *The Cambridge Economic History of Europe, 1: the Agrarian Life of the Middle Ages*, ed. M. M. Postan (Cambridge, 1966), p. 604.

Annaliste and Anglo-American approaches emphasise the limited response of peasant producers to demand, whether because of Le Roy Ladurie's 'cultural stumbling blocks' or the meagreness of their resources and subsistence priorities.

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It is the purpose of this study to use tithe records to establish a chronology of changing grain output levels over a period of more than two hundred and fifty years for one region of England. Discussions of English medieval agricultural output have usually been based on manorial accounts. These documents record seigneurial production, that is output on directly managed manorial demesnes, estimated to have represented at most one-third of total output.⁶⁷ As indicated above, production strategies are likely to have been very different on seigneurial and non-seigneurial land. By contrast, tithe data provide a measure of aggregate arable production levels, not just the output of the seigneurial sector documented by manorial accounts. This unprecedentedly complete dataset on the grain-producing sector of the economy can then be compared with much less complete information on other sectors, such as the pastoral and industrial. A picture emerges of the chronology of change in output from the rural economy over a long period which can be explained in terms of a range of factors including demography and patterns of consumption. This is the subject of chapters 3, 4 and 5.

Underlying the discussion of change in the rural economy is the question of the flexibility of production to changes in demand. Tithe data can also be used to examine the priorities and strategies of non-seigneurial producers. Much of the work described in this chapter implies that medieval cultivators were the passive or helpless victims of wider changes, too preoccupied with other matters or too constrained by their limited resources to show signs of economic agency. By contrast, recent work on manorial accounts has demonstrated that the managers of seigneurial demesnes were anything but helpless in the face of economic change, and shows the range of decisions they made to adjust to prevailing conditions.⁶⁸ Tithe data can never permit the detailed reconstruction of the economy of the non-seigneurial holding but they can be used to test the responsiveness of producers outside the manorial demesne to market signals. These issues arise in the discussions of the three sub-periods in chapters 3, 4 and 5 but new methods have been devised to examine response to the market as directly as possible and these are discussed in chapters 6 and 7. Forbidding and difficult to interpret though they are, tithe data shed a narrow shaft of light on the way a substantial sector of rural society saw the world around them several centuries ago.

⁶⁷ B. M. S. Campbell, *English Seigneurial Agriculture, 1250–1450* (Cambridge, 2000), pp. 55–60.

⁶⁸ D. Stone, *Decision-Making in Medieval Agriculture* (Oxford, 2005).

The Tyne Tees Region

The work of the *Annalists* traditionally begins with an elegant description of landscape and physical geography. In the first edition of *La Méditerranée* Braudel even expressed the hope that ‘a great deal of Mediterranean sunshine will shine from the pages of this book’.¹ This study makes no claim to emulate the remarkable scope and depth of Braudel’s work. In any case, it is a study of north-east England where there is little enough sunshine to brighten the pages of any book. Before beginning discussion of changing production levels in the rural economy, however, it is necessary to examine the method and sources used for this research and to establish the regional context.

If tithe represented approximately one tenth of total output then changing production levels can be observed by collecting tithe receipt data over a number of years. The study is based on tithe records created by the monks of Durham Priory and the first section of this chapter describes the origins, extent and management of the Durham monks’ tithe income. The second section examines more closely the sources in which tithe data are found and the way in which they must be manipulated to provide indicators of production. The final section considers the landscape, economy and society in north-east England in the late middle ages and the extent to which the term ‘peasant’ can be applied to producers.

Durham Priory tithe income

The French historians of the tithe craze of the 1960s and 1970s were not the first to appreciate the significance of tithe receipts as an indicator of economic change. The Benedictine monks of Durham Priory were acutely aware of the importance of their tithe income and what it meant if that income should fall. This is demonstrated by a very unusual document inserted at the end of the second prior’s register. It takes the form of a tabulation showing tithe income, parish by parish, for seven years between 1293 and 1436.² The figures recorded by the monks show a disastrous long-term decline in their resources (see table 1). By 1436 tithe income was less than one quarter of its 1293 level. Not only were the Durham monks aware of the fall in their tithe income over this period but they also understood it in terms of broader economic change. The following

¹ F. Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II*, trans. S. Reynolds (London, 1975), p. 17; P. Burke, ‘Reflections on the Historical Revolution in France: the *Annales* School and British Social History’, in *The Annales School: Critical Assessments*, ed. S. Clark (London, 1999).

² DCM, prior’s register II fos. 355v–356r.

four explanations were given by the monks and they include the factors which historians have identified as important causes of change in the late middle ages:

1. the loss of Scottish parishes,
2. the effects of war,
3. conversion of arable land to pasture,
4. depopulation caused by frequently occurring pestilences.

The monks also calculated that 'spiritual' income, which must have been made up largely of tithes, accounted for approximately one-third of the receipts of the bursar, by far the wealthiest priory office holder. This estimate would probably not be much different if it were possible to include all office holders: clearly tithes were a major stream of monastic income.³ An examination of the origins and extent of this income, and of the way in which it was managed by the monks, is needed if the evidence of tithes for the history of the rural economy of north-east England is to be pursued further.

The right of monasteries to collect the tithe of certain parishes for their own use was a recent phenomenon in the history of the ecclesiastical tax. The origins of tithe lie soon after the biblical creation of mankind when Cain and Abel were expected to provide gifts to the Lord.⁴ The scattered biblical references do not indicate precisely to whom tithes were owed and practice seems to have varied and developed during the early middle ages.⁵ The seventh-century instructions on tithes made by Theodore of Tarsus, archbishop of Canterbury, suggest that tithing was well established in England at this time. Pilgrims and the poor were listed as rightful recipients.⁶ In the second half of the tenth century, King Edgar made an explicit connection with the parish, suggesting tithes had become recognisable parish offerings.⁷ The beneficiaries of tithe income became better defined and, although of uncertain origins, the theory emerged that the receipts from tithe were to be divided into four: the bishop received a quarter, as did the other clergy, a third quarter went to the poor and finally another to the maintenance of churches.⁸

Within this historical context, the ownership of tithes by monasteries has a rather doubtful place, and practice changed completely during the middle ages. From the period before the twelfth century there are examples of monks paying tithes to bishops out of the produce of their lands. They were eventually freed from this obligation and it began to become possible for monasteries to receive

³ Ibid. Transcribed in *Historiae Dunelmensis Scriptores Tres*, ed. J. Raine (Surtees Society 9, 1839), pp. ccl–ccli; R. B. Dobson, *Durham Priory, 1400–1450* (Cambridge, 1973), p. 268.

⁴ Gen. 4:3–5.

⁵ For other biblical examples see: Gen. 14:20; Lev. 27:30–33; Matt. 23:23. For an account of early medieval tithing practice see: J. Sharpe, 'Tithes', in *Dictionary of Christian Antiquities*, ed. W. Smith and S. Cheetham (London, 1880), pp. 1963–5; J. Selden, *The Historie of Tithes* (London, 1618), pp. 35–67.

⁶ For a translation see J. T. McNeill and H. M. Gamer, *Medieval Handbooks of Penance: A Translation of the Principal 'Libri Poenitentiales' and Selections from Related Documents* (New York, 1990), p. 212. For difficulties in translation and suggested versions see G. Constable, *Monastic Tithes: From their Origins to the Twelfth Century* (Cambridge, 1964), p. 25 n. 1.

⁷ F. M. Stenton, *Anglo-Saxon England*, 3rd ed. (Oxford, 1971), pp. 154–6.

⁸ *The Oxford Dictionary of the Christian Church*, ed. F. L. Cross and E. A. Livingstone (Oxford, 1997), p. 1626; F. A. Gasquet, *Parish Life in Medieval England* (London, 1909), pp. 5, 18.

Table 1. ‘Receipts from churches’: calculations made by the Durham monks

	1293	1348	1350	1392	1420	1430	1436
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Scottish parishes	149 5 8						
Norham (Northum.)	260 0 0	139 3 0	111 2 3½	23 1 10	28 4 0	99 3 1	39 8 10
Holy Island (Northum.) (besides portion belonging to cell)	164 0 8						
Ellingham (Northum.)	58 3 4						
Jarrow	60 0 0	80 0 0	44 0 0	46 19 0	35 6 8	29 6 4	31 6 8
Monkwearmouth				20 0 0	13 13 4	12 0 0	7 13 4
Heighington	128 0 0	49 13 4	17 11 0	39 6 8	41 3 4	47 6 8	48 3 4
Aycliffe	111 6 8	70 0 0	1 0 0	31 5 0	30 13 4	24 10 0	24 8 4
Pittington	80 0 0	60 18 4	37 3 4	34 13 4	35 1 8	32 13 4	28 3 4
Monk Hesleden	60 0 0	46 0 0	30 0 0	36 13 4	31 10 0	27 13 4	27 7 0
Kirk Merrington	63 0 0	50 13 4	22 0 0	25 2 6	31 6 8	27 13 4	26 7 4
Billingham	120 0 0			69 11 6	61 6 4	57 18 8	54 13 4
Northallerton (N. Yorks.)	88 0 0	66 13 4	71 1 2	59 6 8	51 0 0	47 16 8	41 13 4
Eastrington (E. Yorks.)	125 0 0	53 6 8	57 18 11	41 6 10	37 6 8	26 13 4	23 14 8
SUM TOTAL	1466 16 4	616 8 0	410 16 8½	452 0 0	396 12 0	432 14 9	353 0 6

Sources: DCM, prior's register II fos. 355v–356r. The tithe tabulation is transcribed in R. B. Dobson, *Durham Priory, 1400–1450* (Cambridge, 1973), p. 271; *Historia Dunelmensis Scriptores Tres*, ed. J. Raine (Surtees Society 9, 1839), pp. ccxlviii–cdli.

tithes from lands they did not own.⁹ The earliest western examples of monasteries receiving tithes are from the seventh century. The theoretical justification for the monastic ownership of tithes was expounded by Abbo of Fleury at the Council of St Denis in 993 and the practice increased considerably from the eleventh and twelfth centuries due to the church's success in recovering tithes which had fallen into lay hands. By 1200 it was unusual for a monastery not to receive income from tithes.¹⁰

During the twelfth century it became clear that the bishop's consent was needed for the appropriation of tithes by monasteries, that is the establishment of a monastery's right to collect the tithes from a particular parish and use them for its own purposes. The monastery was often a landlord in the parish concerned but tithe was also owed from the holdings of other landlords. The process of appropriation was formalised by the Fourth Lateran Council of 1215. A deed was sealed by the bishop, the monastery instituted as rector of the parish and a vicarage set up which provided a parish priest to perform the cure of souls.¹¹ When a parish was appropriated to a monastery the religious community became the rightful recipient of the tithes. During the fourteenth and fifteenth centuries, Durham Priory and its dependent cells received tithe income from thirty-five appropriated parishes, although not all at the same time. They were spread from Nottinghamshire in the south to Scotland in the north (table 2). This study examines tithe income from parishes between the Tyne and Tees, that is those closest to the mother house, which are shown in map 1.

Monkwearmouth and Jarrow parishes were part of the endowment when the Benedictine community at Durham was founded in 1083.¹² The same also appears to have been true of Holy Island.¹³ Most of the other appropriations date from the late twelfth and early thirteenth centuries when the monks pursued a consistent policy in this direction, sometimes in conflict with the bishops. By 1320, the list of churches appropriated to the prior and convent between the Tees and Tweed included all those from which the monks drew tithe revenue in the late middle ages.¹⁴

Occasional later attempts were made to appropriate churches but these were generally unsuccessful. For example, the priors of Durham had long enjoyed the right of presentation to Hemingbrough (E. Yorks.), from which they derived an annual pension.¹⁵ The living was an exceptionally rich one and during the fourteenth century the monks attempted to appropriate the revenues of the church for their own use. In 1347–8 the prior and convent wrote to the archbishop of York

⁹ Constable, *Monastic Tithes*, pp. 2–3, 57.

¹⁰ Ibid., pp. 58, 80, 99, 109–16, 197.

¹¹ R. A. R. Hartridge, *A History of Vicarages in the Middle Ages* (Cambridge, 1930), pp. 5, 9–10, 21.

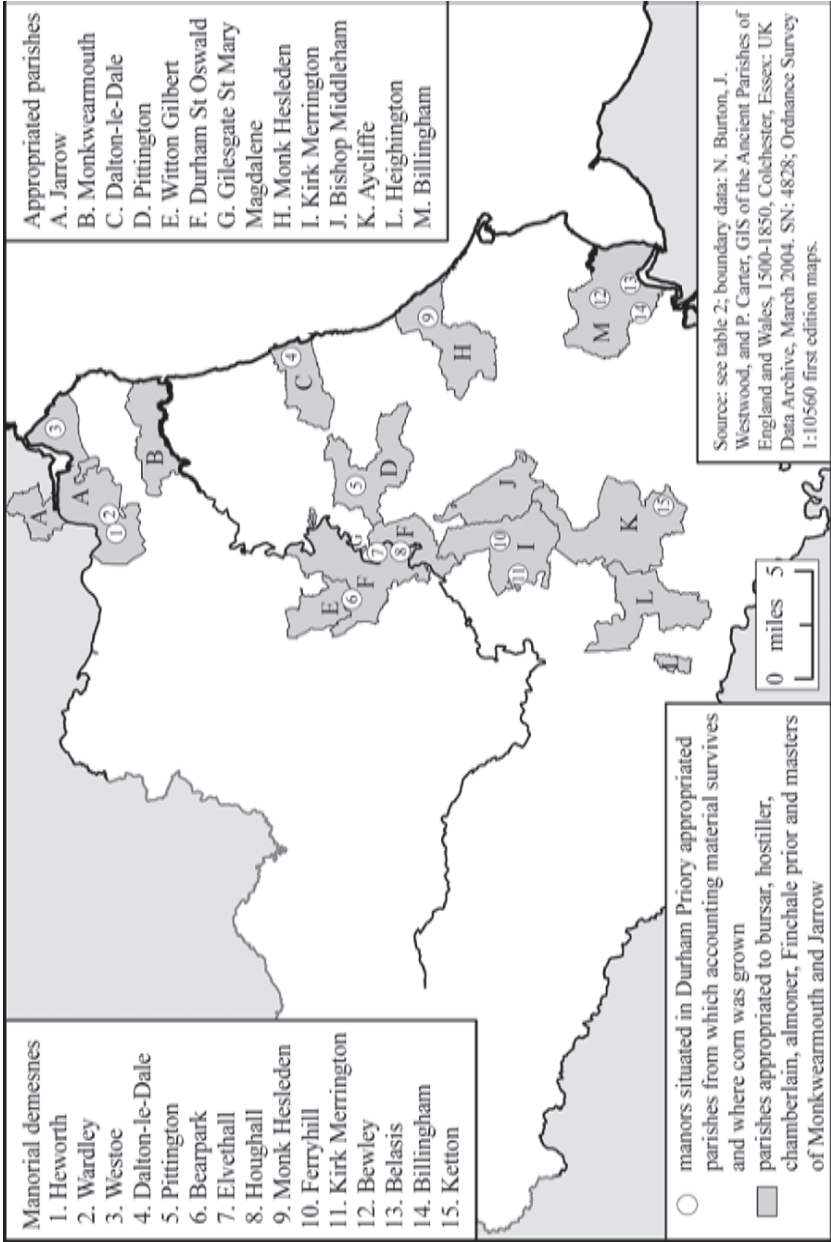
¹² Symeon of Durham: *Libellus de Exordio Atque Procurso Istius, Hoc Est Dunhelmensis, Ecclesie: Tracts on the Origins and Progress of this the Church of Durham*, ed. D. W. Rollason (Oxford, 2000), pp. 202–5, 208–9.

¹³ F. Barlow, *Durham Jurisdictional Peculiars* (Oxford, 1950), p. 19.

¹⁴ Ibid., pp. 17–19, 26–7, 34–42. The list of churches 'in usus suos [i.e. the prior and convent] proprios' appears in a later confirmation by Bishop Bury of Bishop Beaumont's orders: *Richard d'Aungerville of Bury: Fragments of His Register and Other Documents*, ed. G. W. Kitchin (Surtees Society 119, 1910), p. 182.

¹⁵ *Durham Cathedral Priory Rentals, 1: Bursar's Rentals*, ed. R. A. Lomas and A. J. Piper (Surtees Society 198, 1986), p. 223.

Map 1. Durham Priory appropriated parishes and manorial demesnes between the Tyne and Tees



petitioning for the appropriation, using the excuse of fallen spiritual revenues. This letter was backed up by one from Lord Percy and Lord Neville confirming that the monks were experiencing ruin because of the Scottish wars.¹⁶ At one point a licence was obtained for appropriation but was not actually put into effect because of objections from the papacy.¹⁷ By the early fifteenth century, Prior Wessington had given up on the idea of appropriation and Hemingbrough was turned into a college, with the priory having the right to appoint the prebends.¹⁸ The only later appropriations in which the priory was successful were those for the endowment of the priory's Oxford college, founded in the 1380s. These included Bossall and Fishlake in Yorkshire, Frampton in Lincolnshire and Ruddington in Nottinghamshire.¹⁹

The size of the monks' spiritual endowment was in keeping with Durham's status as one of the richest Benedictine houses in England although directly comparable figures from other houses are difficult to compile. Harvey used the Taxation of Pope Nicholas IV to calculate that Westminster Abbey received £273 from its parish churches in 1291.²⁰ Stone used accounting material to estimate that Norwich Cathedral Priory received approximately £900 per annum from its spiritualities at the end of the thirteenth century.²¹ Table 1 shows that the Durham monks received over £1,400 from their parishes in 1293.

Like all large Benedictine houses in the late middle ages, Durham Priory and its dependent cells were managed by monk office holders or obedientiaries. Each obedientiary had a specific field of responsibility which was usually closely related to a particular aspect of monastic life. The hostiller was responsible for looking after the guesthouse and the sacrist the interior of the church. The chamberlain provided the monks' clothes and bed sheets whilst his colleague the commoner looked after a number of creature comforts, including spices and delicacies on appropriate days and keeping a fire burning in the common house. The almoner looked after some of the monks' charitable work. Less narrowly defined was the role of the bursar, the most important among the obedientiaries who received tithes. Among other duties, he was responsible for providing the convent's meat and grain, with the help of his subordinates the cellarer and granator, and was assisted by the terrar whose own property was minimal.²² Like the obedientiaries based in the mother house, the heads of Durham's subordinate monastic cells rendered accounts of their income and expenditure at Durham.

Office holders usually acquired a share of the monastery's endowment with which to carry out their duties and this might include income from tithes.²³ The

¹⁶ *Historical Papers and Letters from the Northern Registers*, ed. J. Raine (*Rerum Britannicarum Medii Aevi Scriptores* 61, 1873), pp. 392–5.

¹⁷ Dobson, *Durham Priory*, pp. 151 n.1, 156–7.

¹⁸ *Ibid.*, p. 146.

¹⁹ *Ibid.*

²⁰ B. F. Harvey, *Westminster Abbey and its Estates in the Middle Ages* (Oxford, 1977), p. 50.

²¹ E. Stone, 'The Estates of Norwich Cathedral Priory, 1100–1300' (unpublished D.Phil thesis, Oxford University, 1956), p. vii; *Scriptores Tres*, ed. Raine, p. ccxlviii.

²² *Rites of Durham*, ed. J. T. Fowler (Surtees Society 107, 1902), pp. 99–101; M. Threlfall-Holmes, *Monks and Markets* (Oxford, 2005), pp. 20–1; Dobson, *Durham Priory*, pp. 253–7. E. M. Halcrow, 'Administration and Agrarian Policy of the Manors of Durham Cathedral Priory' (unpublished B.Litt. thesis, Oxford, 1949), p. 11.

²³ For examples from elsewhere see D. Knowles, *The Monastic Order in England: a History of Its Devel-*

Table 2. Appropriated parishes and office holders
at Durham Priory, c. 1300–1536

Accounting office	Parish (located between the Tyne and Tees unless otherwise indicated)
Almoner	Gilesgate St Mary Magdalene, Witton Gilbert Chapelry (Durham St Oswald parish)
Bursar and terrar	Aldcambus (Scotland), Aycliffe, Bedlington (Northum.; reassigned to sacrist 1357), Billingham, Branxton (Northum.), Earlston (Scotland), Eastrington (E. Yorks.), Ednam (Scotland), Edrom (Scotland; shared), Ellingham (Northum.), Heighington, Holy Island (Northum.; shared), Jarrow (shared), Kirk Merrington, Monk Hesleden, Monkwearmouth (shared), Norham (Northum.), Northallerton (N. Yorks.), Pitlington
Chamberlain	Dalton-le-Dale
Commoner	Bywell St Peter (Northum.; shared)
Hostiller	Durham St Oswald
Master of Jarrow	Jarrow (shared)
Master of Wearmouth	Monkwearmouth (shared)
Prior of Coldingham	Berwick upon Tweed (Northum.), Coldingham (Scotland), Edrom (Scotland; shared), Stichill (Scotland)
Prior of Finchale	Bishop Middleham, Giggleswick (W. Yorks.)
Prior of Holy Island	Holy Island (Northum.; shared)
Prior of Lytham	Lytham (Lancs.)
Sacrist	Bedlington (Northum.; reassigned from bursar and terrar 1357), Bywell St Peter (Northum.; shared), Edlingham (Northum.)
Warden and bursars of Durham College	Bossall (N. Yorks.), Fishlake (W. Yorks.), Frampton (Lincs.), Ruddington (Notts.)

Sources: information contained in DCM, medieval accounting material. This was supplemented with information on parishes appropriated to obedientiaries at the mother house from R. A. Lomas, 'Durham Cathedral Priory as a Landowner and a Landlord, 1290–1540' (unpublished Ph.D. thesis, University of Durham, 1973). For the parishes in County Durham and Northumberland: R. N. Hadcock, 'A map of medieval Northumberland and Durham', *Archaeologia Aeliana* 16 (1939). For parishes in Scotland: *The Priory of Coldingham: the correspondence, account rolls, inventories and law proceedings*, ed. J. Raine (Surtees Society 12, 1841).

hundreds of surviving office holder accounts at Durham reveal a great deal about the flow of income and expenditure within the obedientiary system. In some Benedictine houses the system was centralised. At Peterborough, for example, nearly all the endowment was handled by the treasurer and abbot's receiver who transferred income to the other offices.²⁴ Contrary to the impression of a sixteenth-century observer, however, this was not true of the Durham system.²⁵ There the endowment, including rental income, tithe income and so on, was divided among several obedientiaries to be used in the discharge of their specific

opment from the Times of St. Dunstan to the Fourth Lateran Council, 943–1216, 2nd ed. (Cambridge, 1963), pp. 427–39; B. F. Harvey, *The Obedientiaries of Westminster Abbey and their Financial Records, c. 1275–1540* (Woodbridge, 2002), pp. xiii–xvii.

²⁴ *Account Rolls of the Obedientiaries of Peterborough*, ed. J. Greatrex (Northamptonshire Record Society 33, 1984), pp. 28–43, 49–50, 108.

²⁵ *Rites of Durham*, ed. Fowler, p. 99.

duties. At Durham one office was much better endowed than the others. In terms of tithe income alone, the bursar collected revenue from nineteen of the priory's thirty-five appropriated parishes. Income from twenty-two appropriated parishes (including some from which the bursar collected only a share of the tithe income) was divided between twelve other obedientiaries, including heads of cells. Details are given in table 2.

An appropriated parish yielded various types of tithe income. The usual practice was for the Durham Priory office holder to take the garb tithes, that is those from the corn in the fields. By agreement, the vicar often received the small tithes, that is tithes from other types of production in the parish, including livestock, crops other than cereals and legumes, and garden produce.²⁶ This division in the allocation of tithe income is suggested by hundreds of references to garb tithes in the office holders' account rolls and also by entries in the prior's register referring to the entitlement of vicars.²⁷ Special arrangements were sometimes in place, however. For example, neither the bursar at Durham nor the master of the Jarrow cell received garb tithes from South Shields which was in Jarrow parish; it is likely that they were diverted to the Chapel of St Hilda in that township.²⁸ Likewise, the vicar in the parish of Durham St Oswald did not receive an agreed proportion of tithe revenue and, consequently, the hostiller received the small tithes and paid a stipend to the vicar.²⁹ Such arrangements were occasionally subject to slight readjustment. For example, in 1445–6 the almoner acknowledged in his account that he should have received more from Witton Gilbert parish but that much of the income had been taken by John Hexham, the chaplain. The almoner explained that he could not recover these resources because of the chaplain's poverty.³⁰ The glebe, that is land set aside on which the priest could produce his own food, might also provide income for a monastery which had appropriated the parish. For example, the 'lands and tenements' of Bishop Middleham rectory were leased by the Finchale priors.³¹

The tabulation of tithe income made by the Durham monks described at the beginning of this chapter, and reproduced in table 1, was copied into the prior's register with no explanation of its purpose. However, it appears to have been drawn up during a period of controversy over a change in the way the priory's finances were managed. The final year from which income appears in the tabulation is 1436 and this suggests a connection with an administrative experiment in which the office of the bursar was split into three. This change in the priory's management structure was introduced by Prior Wessington in 1438 to distribute

²⁶ R. A. Lomas, 'Durham Cathedral Priory as a Landowner and a Landlord, 1290–1540' (unpublished Ph.D. thesis, University of Durham, 1973), p. 140.

²⁷ DCM, prior's register II, fo. 95r. This ordinance refers to the vicarage of Billingham and dates from c. 1325 – c. 1330. DCM, prior's register II, fo. 97r. This assignment refers to the vicarage of Bishop Middleham and dates from 1325. I am grateful to Dr Lynda Rollason for these references. Later disputes involving the vicars of Pitlington demonstrate their ancient right to the tithe lambs of the parish: *Churchwardens' Accounts of Pitlington and Other Parishes in the Diocese of Durham from A.D. 1580 to 1700*, ed. J. Barmby (Surtees Society 84, 1888), p. 2.

²⁸ Lomas, 'Durham Cathedral Priory as a Landowner and a Landlord' (unpublished thesis), p. 140.

²⁹ *Ibid.*, p. 197. This is evident in the hostillers' accounts. E.g. DCM, hostiller's account 1357–8.

³⁰ 'propter notoriam paupertatem eiusdem': DCM, almoner's account 1445–6(A).

³¹ E.g. *The Priory of Finchale: the Charters of Endowment, Inventories and Account Rolls*, ed. J. Raine (Surtees Society 6, 1837), p. cvi.

onerous responsibilities more evenly. It was highly contentious and Dobson has described Wessington's innovation as 'the burning issue in internal monastic politics at the time'.³² Four years later the priory was visited by the new bishop, Robert Neville. Wessington's division of the bursar's office attracted the attention of the visitors and was raised in the first of the forty-six articles they produced.³³ As will be seen in chapter 5, the 1430s and 1440s were very difficult years for the priory and it is not surprising that its finances came under close scrutiny by the visitors. The prior's effectiveness was being examined by his ecclesiastical superior and it seems he, or his supporters, drew up the tithe receipt tabulation to demonstrate that falling income was not due to his reorganisation of the obedi-entary system but rather to much longer-term changes.

The connection between the tithe tabulation and the controversy over the division of the bursar's office is supported by further evidence. A list of the income of the accounting obediences was inserted after the tithe receipt data in the prior's register. The list shows that the income of the bursar's office amounted to £1,000 and that of the second richest obedience to only £170 and could be used as a strong argument in favour of dividing the bursar's revenue and responsibilities. In 1442 a file of documents was prepared by the monks to justify the decision to divide the bursar's office.³⁴ This unusual record consists of seven separate sheets of paper sewn together which go into copious detail about the nature of the bursar's office.³⁵ The tabulation of tithe receipts seems to have been used in the preparation of one of these documents which attributes the particularly severe fall in spiritual revenues to 'war between the kingdoms of England and Scotland' and lands 'once cultivated ... put to pasture'.³⁶ The form of words used here is the same as that in the list of causes of the decline in tithe income inserted into the prior's register after the tabulation. Wessington's anxiety to demonstrate that he was not responsible for the precarious state of his house's finances is also apparent at the end of the same document where it is stated that the causes of falling income could not be attributed to the negligence of the prior.³⁷

Wessington's administrative experiment ended with a return to the old system.³⁸ In this context, however, it is the way in which tithe data were used by the monks which is of interest. Tithe receipts were chosen as a convenient substitute for total income in the 1430s and 1440s. The nature of the explanations which they appended to the tabulation shows that the monks were clearly aware of changes in levels of agricultural production over time which had led to falling tithe income. This fifteenth-century use of tithe as an economic indicator is not so far from that made by French historians several hundred years later and

³² Dobson, *Durham Priory*, p. 124.

³³ *Ibid.*, pp. 234–5, 287–90.

³⁴ *Ibid.*, p. 285 n. 3. It seems the documents were actually collected after Neville's visitation because the bishop stipulated that he would not attempt to enforce a solution to the problem of the bursar's office until there had been debate among the monks: Dobson, *Durham Priory*, p. 289.

³⁵ DCM, Loc.XXI.20.

³⁶ 'guerra inter regna anglie et scocie' and lands 'quondam culte ... ad pasturam posite'.

³⁷ 'negligentie dicti Prioris'. Another document, also produced in 1442, goes to further lengths to describe the fall in spiritual revenue and its causes: DCM, Loc.XXVII.1.(a). It is likely that this was also in some way associated with the visitation.

³⁸ Dobson, *Durham Priory*, pp. 287–90.

encourages confidence in the study of Durham Priory tithe receipts as indicators of agricultural production.

Sources, tithes and agricultural production

The Durham monks had been able to draw on their carefully archived accounting material to produce the tabulation of tithe income. Benedictine accountancy procedures seem to have emerged in the early thirteenth century. In 1221, following its southern counterpart, the Benedictine General Chapter of the northern province enjoined monks responsible for receiving a proportion of the monastery's income to render annual account.³⁹ This was reinforced by Pope Benedict XII in 1336.⁴⁰ Although the earliest surviving Durham tithe data take the form of valuations of churches made for taxation purposes in the 1250s, the earliest surviving receipts recorded in internal documentation are found in a rent roll of 1270.⁴¹ Voluminous series of office holder accounts begin with the first bursar's account of 1278–9. Annual data, with very few gaps, are available up to 1536. All in all, the Durham Priory medieval accounting material contains approximately 16,000 tithe receipts in over 1,200 individual accounts.⁴² Such an extraordinary resource amply realises the criterion established by Le Roy Ladurie for the compilation of a good tithe data series: the 'ideal situation arises ... when it is possible to establish continuous series, ideally covering more than one century'.⁴³

The tithes received by monasteries from their appropriated parishes were recorded in four different types of document drawn up for accounting purposes.

1. Accounts rendered by priory office holders.
2. Rectory accounts. These were compiled by local officials responsible for collecting all the revenues in an appropriated parish.
3. Manorial accounts. These were compiled by local officials who were responsible for looking after demesne land owned by the monastery in an appropriated parish. The same officials sometimes also collected the tithe corn, presumably as a matter of administrative convenience.
4. Administrative documents which are supplementary, or preparatory, to the series of account rolls. These include lists of sold tithes drawn up with rental material or lists of receipts and expenditures compiled by the bursars over the course of the year.

³⁹ *Chapters of the English Black Monks: Documents Illustrating the Activities of the General and Provincial, Volume 1*, ed. W. A. Pantin (Camden Third Series 45, 1931), p. 238.

⁴⁰ *Chapters of the English Black Monks: Documents Illustrating the Activities of the General and Provincial, Volume 2*, ed. W. A. Pantin (Camden Third Series 47, 1933), p. 230.

⁴¹ The earliest surviving tithe data are from c. 1252 and 1254 and are contained in British Library MS Stowe 930 ff. 62r, 64v and 67v. The 1254 data are printed in *The Valuation of Norwich*, ed. W. E. Lunt (Oxford, 1926), pp. 385–6. For Piper's dating of these documents see: *Priory Rentals*, ed. Lomas and Piper, pp. 15–16. For the 1270 rent roll see *Priory Rentals*, ed. Lomas and Piper, pp. 26–7, 28–9.

⁴² The Durham Priory accounting material is listed in A. J. Piper, 'Muniments of the Dean and Chapter of Durham: Medieval Accounting Material' (Durham University Library Archives and Special Collections searchroom handlist, 1995). Most of the information from this handlist is on the Durham University Library Archives and Special Collections web pages at <http://flambard.dur.ac.uk/dynaweb/handlist/ddc/dcdmaccs/> (viewed November, 2006).

⁴³ E. Le Roy Ladurie and J. Goy, *Tithe and Agrarian History from the Fourteenth to the Nineteenth Centuries: an Essay in Comparative History*, trans. S. Burke (Cambridge and Paris, 1982), p. 17.

Over 90 per cent of the medieval Durham Priory tithe receipts are recorded in accounts rendered at the mother house by obedientiaries, including the heads of dependent cells, category 1 above. Very few rectory accounts, category 2, survive at Durham, the only substantial collections being the fifteenth-century accounts of the proctors of St Margaret's and St Oswald's, managers of chapelries in the very large parish of Durham St Oswald. The records of tithe receipts in manorial accounts, category 3, are also limited. They are relatively narrowly distributed chronologically, being confined almost exclusively to the pre-Black Death manorial accounts dating from the 1290s until the 1340s. The documents included in category 4 are sporadic in survival and the data they contain are often duplicated in the accounts themselves. This distribution of tithe data is not typical of other similar archives. Although office holder accounts from other institutions do sometimes include tithe data, the best series elsewhere are often in rectory accounts.⁴⁴

Before considering the types of tithe data contained in the Durham Priory records, some clarification of the terminology used in this study is required. The garb tithes which the monks owned in their appropriated parishes were collected on the major field crops, including wheat, barley, oats, peas and beans. As this list shows, the monks' tithe income consisted of various cereal crops but also of legumes. Technically, the terms 'corn' and 'grain' refer to cereals and are misleading if both cereals and legumes are meant. In this study, however, the terms 'corn' and 'grain' have been adopted when referring to all the major field crops, including legumes, unless otherwise stated. Another slight confusion arises in the distinction of 'corn' and 'grain'. Contrary to the North American usage, by which 'corn' refers to maize, in this study 'corn' means unthreshed crops and 'grain' threshed output.⁴⁵

The Durham Priory office holders managed their tithe income in two ways. In some cases they employed agents to collect the tithe corn and either consumed it themselves, used it as fodder for their animals or sold it.⁴⁶ It was more common, however, for them to sell tithes before they were collected for agreed quantities of cash or grain.⁴⁷ In many cases, this was done annually but there are also examples of leases of tithes for longer periods.⁴⁸ Records of tithes received in these

⁴⁴ For other office holder accounts containing tithe receipts see: Canterbury Cathedral Archives and Library, almoners' accounts; *The Bolton Priory Compotus, 1286–1325: Together with a Priory Account Roll for 1377–78*, ed. I. Kershaw, D. M. Smith, and T. N. Cooper (Yorkshire Archaeological Society Record Series 154, 2000), pp. 554–5. For series of rectory accounts see: Westminster Abbey Muniments, Kelvedon rectory accounts; *The Pipe Roll of the Bishopric of Winchester, 1301–2*, ed. M. Page (Hampshire Record Series 14, 1996), pp. 291–6; *The Pipe Roll of the Bishopric of Winchester, 1409–10*, ed. M. Page (Hampshire Record Series 16, 1999), pp. 273–81.

⁴⁵ I am grateful to Professor Paul Harvey for raising these issues with me.

⁴⁶ Monthly and weekly consumption at the mother house of various types of grain received as tithes (and from other sources) is recorded in surviving granators' accounts: e.g. DCM, granator's account 1415–16. In 1379–80 tithe peas and beans were used as fodder for the prior's horses and for carthorses: DCM, bursar's account 1379–80, *Empcio avene fabarum et pizarum*. In 1380–1 the bursar recorded that the tithe of Southwick was in hand and yielded 14 quarters of wheat which was 'sold by the serjeant of the manor at 7s. 6d. per quarter': DCM, bursar's account 1380–1, *Parochia de Wermouth*. For detailed discussion of tithes and the priory's grain supply policy, see B. Dodds, 'Managing Tithes in the Late Middle Ages', *Agricultural History Review* 53 (2005).

⁴⁷ See below, pp. 27–30.

⁴⁸ Occasional contracts drawn up prior to the harvest survive, e.g. an agreement was drawn up on

two ways provide data which can be used as indicators of arable production levels but each type of data throws up certain problems.

Nearly one tenth of tithe receipts in the priory archive are for tithes kept in hand, that is collected as corn, but accountants did not record the quantities received in around half of these cases.⁴⁹ Clearly this was not the priory's usual method of tithe collection. The only parish where an obedientiary had a consistent policy of keeping tithes in hand, and from which substantial amounts of data survive, is Billingham on the north bank of the River Tees. Tithes from most other parishes were kept in hand only occasionally, perhaps when sufficiently high bids were not tendered for the purchase of the tithe before the harvest.⁵⁰ Numerous though the Billingham parish grain tithe data are, they are not without problems. Patterns of survival present the most serious difficulties. The long run of Billingham data derives from one parish and the series contains a major gap for the years 1344 to 1383, covering the Black Death and its aftermath. Until the 1340s grain tithe receipts were recorded in manorial accounts. Only after the introduction of a system for recording grain tithe receipts in the accounts of the bursars in the late fourteenth century do data survive again for quantities of grain received as tithe.⁵¹ None of the other shorter grain tithe series from other parishes fills this mid-fourteenth-century gap.

The relationship between quantities of corn collected as tithe by the monks' agents and total output might have been affected by reluctance to pay the tax on the part of those owing tithes. Court records reveal that non-payment and under payment of tithes did occur, in north-east England as elsewhere. The villagers of Lowick in Northumberland, for example, destroyed tithes by throwing them into pits for consumption by animals in preference to handing them to the rector.⁵² The level of tithe evasion presumably depended upon the vigilance of the tithe collector. Supervision seems to have been carried out by riders employed during the harvest period to circulate in the fields, ensuring that the tithe sheaves were put to one side as required.⁵³ The tithe owner must have made a decision on how much money to spend on tithe collection, balancing the value of the additional grain he would collect if fraud was prevented with the cost of more thorough policing. This suggests there was greater investment in tithe collection during years of high grain prices and curtailed investment in years of low grain prices. In

1 August 1342 between Reginald of Haswell and the prior and convent for the payment of £15 13s. 4d. on 20 March and 24 June in 1343 for the Eden and South Sherburn tithes: DCM, Miscellaneous Charter 3957. More usually, however, the only indications that sales were annual are the changing sums paid and purchaser names, e.g. in a sample of sixteen tithe receipts from Heighington in the period 1350–69 the sum paid changed every year even if the buyer did not: DCM, bursars' accounts. For examples of leases for more than one year, see Richard Helmeslay's payment in 1431–2 of £8 13s. 4d. for the first year of a three year lease on the Romanby (N. Yorks.) tithes: DCM, bursar's account 1431–2, *Decima garbarum de Alverton*.

⁴⁹ E.g. the tithes of Brafferton in Aycliffe parish were in hand in 1350–1 and a note to this effect was added after the summing up for that parish section: DCM, bursar's account 1350–1(A), *Decime* (no separate parish heading given).

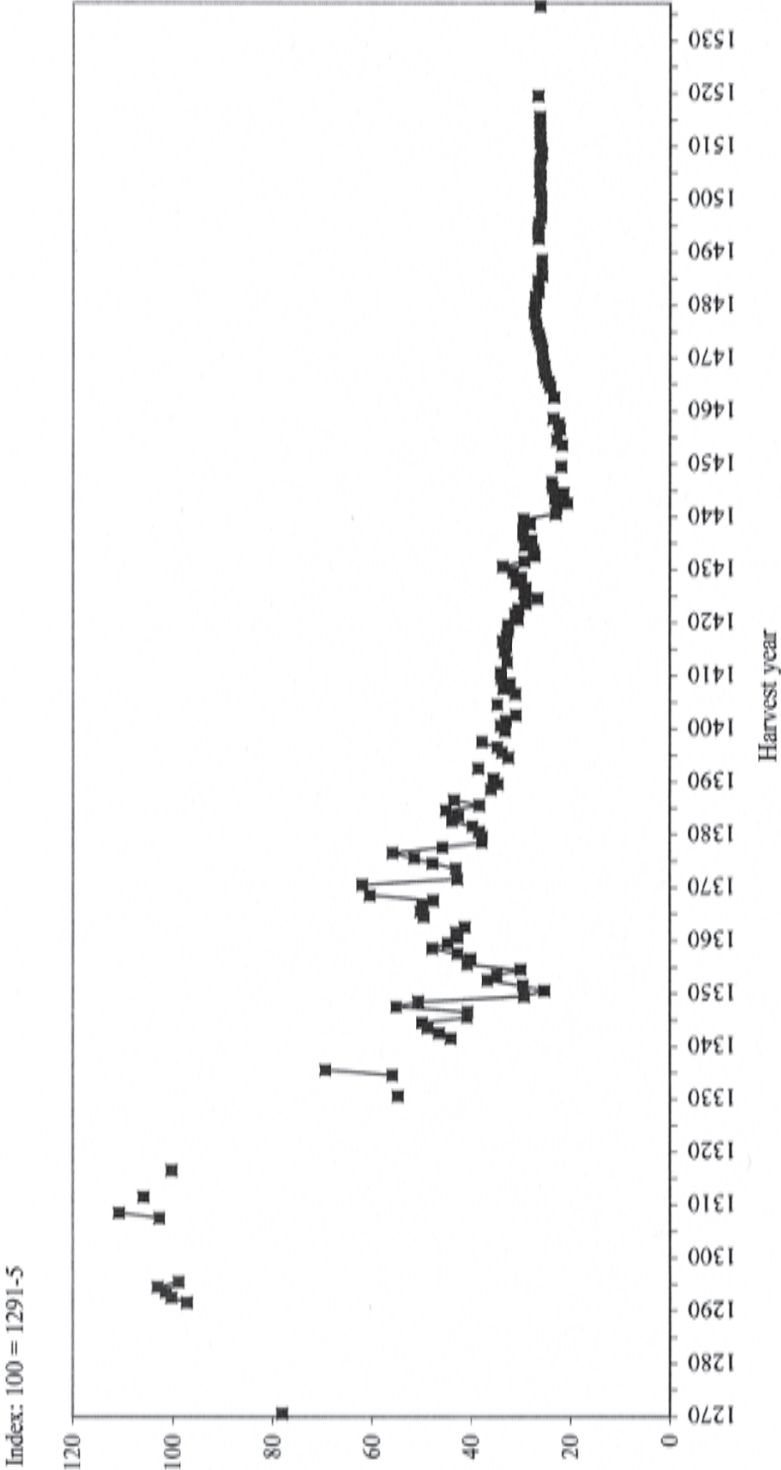
⁵⁰ Dodds, 'Managing Tithes', 136–7.

⁵¹ *Ibid.*, 137–9.

⁵² B. Dodds, 'Estimating Arable Output Using Durham Priory Tithe Receipts, 1341–1450', *Economic History Review* 57 (2004), 259. Calendar by Kelham of DCM, prior's register II, fos. 144r–145r available at <http://flambard.dur.ac.uk/dynaweb/handlist/ddc/dcdregr2/> (viewed October 2006).

⁵³ Dodds, 'Managing Tithes', 129.

Figure 1. Indexed cash receipts from tithes in the Tyne Tees region sold by Durham Priory, 1270–1536



Source: see chapter 2.

other words, it may be that only in certain years was it worth investing in highly vigilant tithe collection and thus ensuring as much as possible of the 10 per cent owed was actually received. The Durham accounts do not provide sufficient information on tithe collection to measure its cost and effectiveness but it is possible that this type of price responsiveness distorts the relationship between quantities received from tithe and actual output in the parishes concerned.⁵⁴ Caution is required when using grain tithe data as indicators of changes in output.

These difficulties are, to some extent, overcome by the use of receipts from tithes sold for cash. Durham office holders sold their tithes before the harvest in over 90 per cent of cases in which records of receipts survive. There are over 8,000 cash receipts from sold garb tithes in the Durham Priory medieval accounting material which can be used as indicators of production levels.

Such data do not present a ready-made indicator of aggregate grain output. The Durham Priory monks sold tithes from several hundred different places and combinations of places. For example, the parish of Pitlington contained several units, or townships, from which tithe was received. The largest and most consistently represented in the accounting material are North Pitlington, South Pitlington, Ludworth, Shadforth, North Sherburn and South Sherburn. Tithes were also received from smaller units in the parish, perhaps no more than collections of holdings or moorland farms, including Ravensflat, 'Warknoll' and 'Babilton'.⁵⁵ For the purposes of this study, the word 'township' is employed as a term of convenience to refer to units from which tithe was collected, even if these units did not necessarily contain dwellings. Although the large number of townships and parishes from which tithes were sold permits some sensitivity to local variation in the analysis of the data, it also creates difficulties in estimating aggregate production levels. For instance, whilst the accounts often record tithe receipts from each township separately, sometimes the tithes from combinations of townships were sold together. The tithes of Ludworth and South Pitlington, for example, were recorded as separate sales in the bursar's account of 1408–9 but were sold jointly in the following year.⁵⁶ Likewise, receipts from tithes sold for cash are only sporadically available from the townships in Billingham parish because of the frequency with which these tithes were collected by the monks' agents as corn. The result is the multiplication of a bewildering number of separate series from the townships, and combinations of townships, from which tithes were sold. This problem can be overcome by indexing cash receipts from sold tithes from individual townships, and combinations of townships, and then calculating average indices to give the best approximation of overall changes in tithe receipt levels.⁵⁷ Indexed receipts from tithes sold for cash are shown in figure 1.

In order to use income from sold tithes as an indicator of production levels, the process of deflation devised by French historians was used. Described in

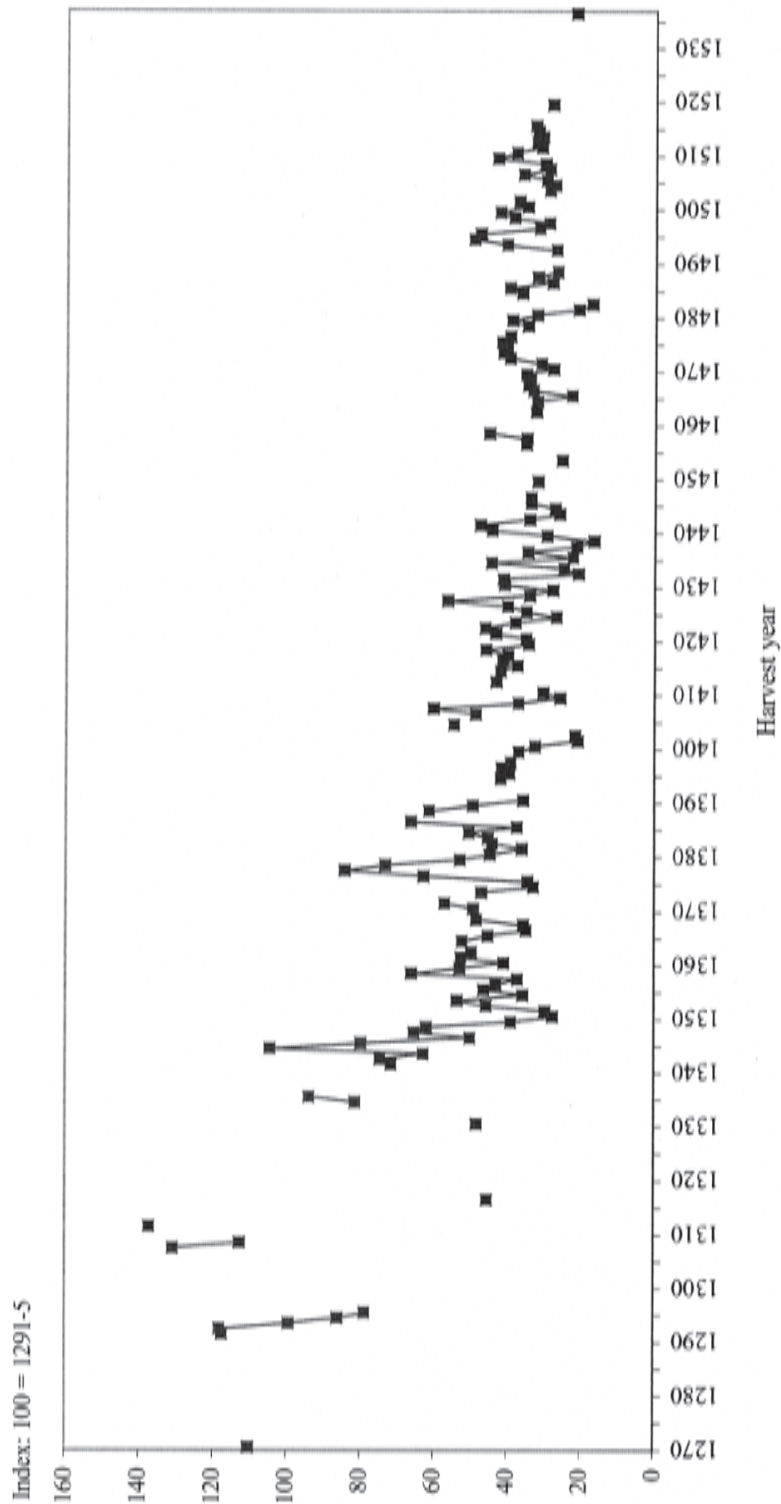
⁵⁴ For further discussion of this problem see below, pp. 139, 143–4.

⁵⁵ For references to tithes received from Ravensflat and 'Warknoll' see *Priory Rentals*, ed. Lomas and Piper, p. 69; *Extracts from the Account Rolls of the Abbey of Durham*: 3, ed. J. T. Fowler (Surtees Society 103, 1901), p. 688. For 'Babilton' see DCM, bursar's account 1449–50, *Decime garbarum parochie de Pitlington*.

⁵⁶ DCM, bursar's account 1408–9, *Parochia de Pitlington*; DCM, bursar's account 1409–10, *Parochia de Pytlington*.

⁵⁷ The process of indexing is complex and is treated fully in the appendix.

Figure 2. Estimated grain output indices based on Durham Priory cash tithe receipts from the Tyne Tees region, 1270–1536



Source: see chapter 2.

chapter 1, this process relies on the assumption that the value for which a tithe was sold was approximately equal to the product of the number of units of grain yielded by the tithe and the price per unit of grain.⁵⁸ In other words, the amount of grain received as tithe can be estimated by dividing the cash sum for which the tithe sold by the grain price.⁵⁹ The basic soundness of this assumption applied to the sale of Durham tithes as late as the nineteenth century when Bailey, in his report on the region's agriculture, declared that tithes were normally let annually, their value varying with 'estimated produce' and 'the price it would sell for at market'.⁶⁰ Estimates of the value of corn standing in the fields were difficult to make but, equally, were necessary for other processes such as the leasing of land.⁶¹ Accurate estimates must have been facilitated by the practice of selling tithes shortly before the harvest when the quality and quantity of corn was visible.⁶² However, Bailey also observed that expenses for 'collecting, threshing, marketing, taxes etc.' had to be allowed and it is these unquantifiable deductions that mean this method of using cash receipts from sold tithes has attracted serious criticism.⁶³ In other words, as described in chapter 1, the value of the tithe corn was discounted when bought before the harvest to allow for these expenses. A further discount not mentioned by Bailey is the allowance of some profit for the tithe buyer. Also not mentioned by Bailey, or considered by French historians, is the payment of interest by tithe buyers. The Durham practice was for the buyer to pay for the tithe on appointed days in the year following the harvest. Since he had received the tithe grain at harvest time he was, in effect, receiving a loan. It is likely therefore that an interest payment was added to the value of the tithe corn when the purchase agreement was drawn up. No detailed information survives on the changes in collection and processing costs, tithe buyers' profit or interest rates.⁶⁴

The possible impact of these unknown factors on the usefulness of the deflated tithe series as indicators of arable production levels can be tested in a speculative analysis. It is well known that the period following the Black Death was one of rising labour costs and, in all probability, rising interest rates.⁶⁵ Although nothing is known about the amount of profit made by Durham tithe buyers, information does exist from parts of France.⁶⁶ These scattered data can be used to test the maximum possible impact of fluctuations in the unknown quantities across the

⁵⁸ See above, pp. 7–8.

⁵⁹ In this case, the indexed cash receipts from sold tithes were deflated by grain price indices. See Dodds, 'Estimating Arable Output', 258.

⁶⁰ J. Bailey, *General View of the Agriculture of the County of Durham* (London, 1810), p. 70.

⁶¹ See, for example, the estimates of the value of manorial sown acreages: *Halmota Prioratus Dunelmensis: 1*, ed. W. H. D. Longstaffe and J. Booth (Surtees Society 82, 1889), pp. 120–1; *Priory of Finchale*, ed. Raine, pp. x, xii.

⁶² Dodds, 'Managing Tithes', 126.

⁶³ Bailey, *Agriculture of the County of Durham*, p. 70.

⁶⁴ For the potential impact of these factors see the appendix and Dodds, 'Estimating Arable Output'.

⁶⁵ D. L. Farmer, 'Prices and Wages, 1350–1500', in *The Agrarian History of England and Wales, 3: 1348–1500*, ed. E. Miller (Cambridge, 1991); B. Dodds, 'Workers on the Pitington Demesne in the Late Middle Ages', *Archaeologia Aeliana* 28 (2000); D. N. McCloskey and J. Nash, 'Corn at Interest: the Extent and Cost of Grain Storage in Medieval England', *American Economic Review* 74 (1984); G. Clark, 'The Cost of Capital and Medieval Agricultural Technique', *Explorations in Economic History* 25 (1988).

⁶⁶ This evidence is summarised in Dodds, 'Estimating Arable Output'.

period. Another factor requiring consideration is the calculation of grain prices for use in deflation, which depends on the quantities of the various grain types making up tithe output. Again, only scattered information on this survives but a speculative analysis of the possible impact of this factor was also undertaken. The procedures adopted for these tests are described in the appendix, and the results presented. They demonstrate that unknown factors did affect the relationship between deflated receipts from tithes sold for cash and actual grain output over the long term but to a degree that does not seriously affect the overall trend of the series. Likewise, change in the unknown factors was probably not sharp enough to affect seriously the shorter-term changes shown by the deflated cash receipts from sold tithes. Most importantly, the survival of large numbers of cash receipts from sold tithes from each year mean that the aggregate output indicators are based on averages, offsetting the effect of individual examples of higher buyer's profit, unusual harvest composition etc. The series of estimated grain output indices, based on the deflation of cash receipts from sold tithes and given in figure 2, has therefore not been adjusted according to unknown factors.

The impact of tithe fraud appears to be a more intractable problem. However, although there is no way of obtaining a quantitative measure of the extent of tithe fraud, it probably does not undermine the usefulness of cash receipts from sold tithes as indicators of arable output as much as might initially be expected. As indicated above, it is likely that investment in tithe collection, and therefore the extent of tithe fraud, varied according to grain prices and other factors. However, the amount for which the tithe was sold before the harvest was fixed independently of the tithe buyer's decision on how thoroughly to supervise the collection of his tithes. The implication is, therefore, that changing levels of tithe fraud do not seriously affect the relationship between tithe sale price and arable output.

Data from external assessments of the value of tithes for the purposes of clerical taxation have had to be excluded from these calculations. As mentioned above, these survive from as early as the mid-thirteenth-century but could not be used because of uncertainty over the relationship between valuations made for taxation purposes and the actual value of appropriated rectories. After all, in order to pay less tax, it was in the interest of the monastery to ensure assessments of the value of their sources of income were as low as possible.⁶⁷

The receipts of tithe grain and cash for sold garb tithes are not the only tithe data useful to the economic historian. All types of production were subject to the tithe and the Durham accounting material contains information on products other than the major cereals and legumes which were tithed. In 1461–2, for example, Richard Bell, prior of Finchale, bought the tithes of hay, flax and hemp from the township of Cocken adjacent to the priory.⁶⁸ Non-agricultural types of production were also tithed. One such tithe in north-east England was that on coal. In 1526–7, for example, the almoner made entries in his account for coal tithes from the 'Camhugh', Findon and Fulforth pits in Witton Gilbert parish but did not receive any income because the pits were deserted.⁶⁹ As mentioned above, small

⁶⁷ *Valuation of Norwich*, ed. Lunt, pp. 95–156, 566–81.

⁶⁸ *Priory of Finchale*, ed. Raine, p. cclxxxiv.

⁶⁹ DCM, almoner's account 1526–7.

tithes were often assigned to the vicars, meaning receipts were not recorded in the priory office holder accounts. As a result, it is only rarely possible to quantify these non-arable and non-agricultural types of production.

Other types of data on arable production survive in the accounts from the manorial demesnes which belonged to Durham Priory (map 1). There are accounts from eighteen Durham Priory manors where corn was grown. Fifteen of these were situated in parishes appropriated to the priory and therefore the accounting material provides information on seigneurial production in areas from which tithe output data survive.⁷⁰ Although the series of Durham manorial accounts are not continuous enough to permit the comparison of demesne and tithe output over several decades, some analysis is possible over shorter periods.

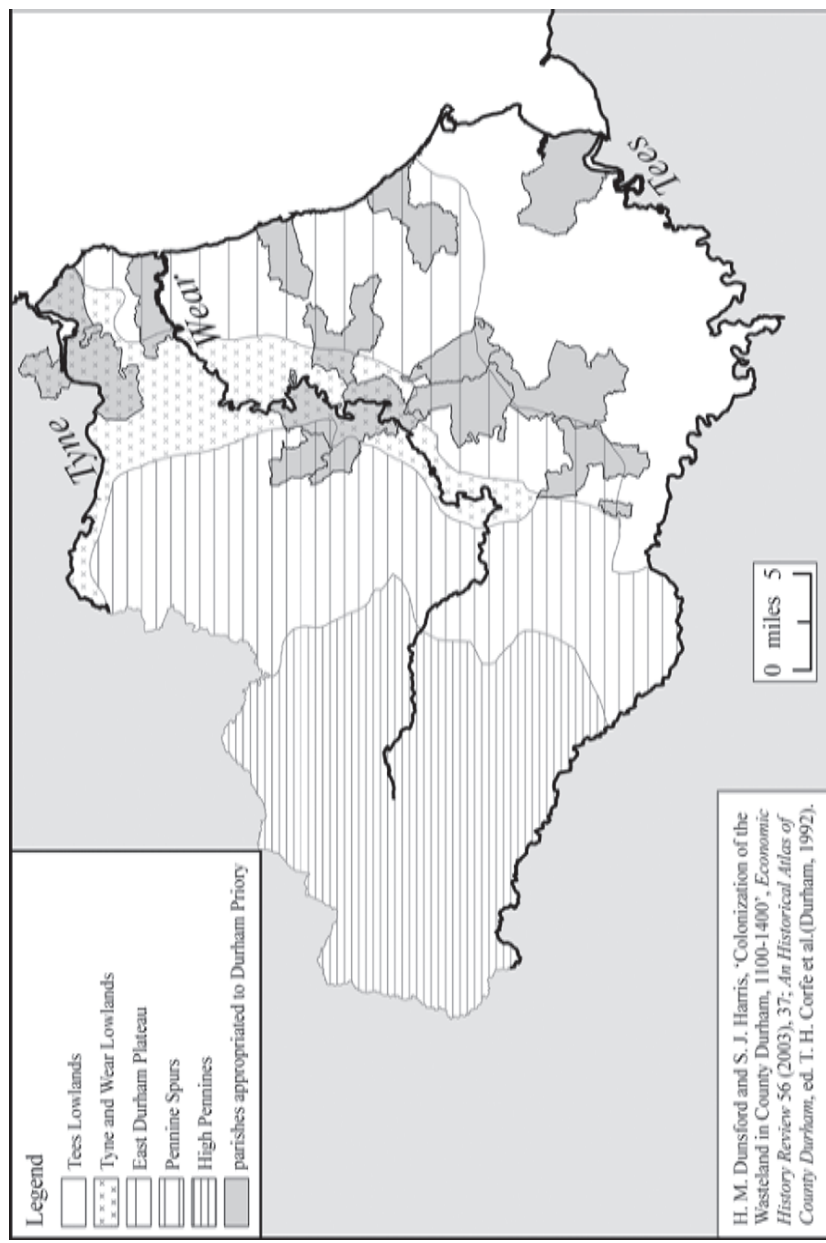
The receipts from tithes sold for cash also provide prosopographical information in the form of the names of the tithe purchasers for over 7,000 transactions. Tithe purchase is an important and hitherto unexplored aspect of the commercialisation of the late medieval economy and this mass of prosopographical material is an indicator of the changing economic activity of different groups in society across the period.

The sources for the study of the rural economy of the Tyne Tees region in the late middle ages are unusual. Familiar and well-mined sources enjoyed by historians of other regions are lacking. This applies in particular to documents related to taxation. The Palatinate of Durham was a liberty in which the bishop, not the king, had the right to tax. This means, for example, that there are no surviving records comparable to those made for the collection of the taxes on movable property, poll taxes and subsidies elsewhere in England.⁷¹ It is true that the archives of the region's ecclesiastical landlords, and those of Durham Priory in particular, are exceptionally rich. Even these, however, have limitations. The series of accounts are remarkably complete but other types of estate record are sometimes lacking. For example, there are surveys of bishopric lands but no survey survives giving details of all types of landholding on the priory estate. More important than the distinctiveness of the sources, however, is the extent to which rural economy and society in the region differed from elsewhere and this is discussed in the final part of this chapter.

⁷⁰ Accounting material survives from nearly all priory manors. The list (with office holder to whom the manor pertained and parish) is as follows: Bearpark (bursar; Durham St Oswald); Bewley (bursar; Billingham); Belasis (bursar; Billingham); Billingham (bursar; Billingham); Dalton le Dale (bursar; Dalton le Dale); Elvethall (hostiller; Durham St Oswald); Ferryhill (bursar; Kirk Merrington); Fulwell (bursar; Monkwearmouth); Heworth (bursar; Jarrow); Houghall (bursar; Durham St Oswald); Ketton (bursar; Aycliffe); Merrington (bursar; Kirk Merrington); Muggleswick (bursar; Muggleswick); Pitlington (bursar; Pitlington); Rainton (bursar; Houghton le Spring); Wardley (bursar; Jarrow); Westoe (bursar; Jarrow); Wingate (Finchale prior; Kelloe).

⁷¹ See below, pp. 59–60.

Map 2. Geographical divisions and parishes appropriated to Durham Priory between the Tyne and Tees



Peasants, producers and the Tyne Tees region

Having established the sources used for this study of agricultural production, and the validity of the method employed, the final section of this chapter will set the regional context. The area between the rivers Tyne and Tees is a long way from more thoroughly researched parts of southern and midland England. The extent to which the rural economy was different from that in better understood regions is therefore important in establishing the representativeness and significance of this study. The regional context will be established first through a discussion of the agricultural geography of the area, including a description of farming types and practices. There will then be a consideration of the landlords in Durham Priory's appropriated parishes and of the patterns of landholding and tenure.

As was the case for all other regions of England in the late middle ages, the economy of the Tyne Tees region was predominantly agricultural. Historians and geographers have distinguished between highland and lowland zones of England and this distinction has an important bearing on agriculture.⁷² The lowland zones were characterised by arable farming and there was sometimes little space for pasturing livestock. In the highland zones, by contrast, poorer soils meant there were much larger stretches of uncultivated land and peasant flocks and herds were much more numerous. This affected settlement patterns and tenants' relationship with their lords. The lowland areas were those of open fields and heavily manorialised nucleated villages but, in the highlands, settlement was much sparser, taking the form of isolated farmsteads or hamlets, and the ties of lordship were looser. Producers also had closer links with towns in the lowland zones where urban settlement was denser.

The distinction between highland and lowland must be applied within the Tyne Tees region as shown in map 2. Roughly defined by the river valleys, the most fertile land in the area is to be found in the Tees, Tyne and Wear lowlands. The soils are fertile clay loams, well-suited to the cultivation of arable crops. By contrast, moving west of the city of Durham, increasingly high ground and poor soil is found where it is more difficult to grow crops. Some features of the upland zone reach into the eastern part of the region in the form of the East Durham plateau, a magnesian limestone escarpment characterised by drier, less fertile loams and clays.⁷³ Geography defined the agriculture practised in different areas within the region. In the first half of the sixteenth century, Leland observed the 'pure good corne' found in southern parts of the region and contrasted it with areas further west 'not very fertile of corne' but with 'very fine gresse' or 'welle woddid'.⁷⁴ Cropping patterns reflect the geographical divisions. In his survey of agriculture in the region at the beginning of the nineteenth century, Bailey observed that the most fertile soils in the southeast of the region produced 'good

⁷² M. M. Postan, 'Medieval Agrarian Society in its Prime: 7. England', in *The Cambridge Economic History of Europe, 1: the Agrarian Life of the Middle Ages*, ed. M. M. Postan (Cambridge, 1966), pp. 555–80.

⁷³ Bailey, *Agriculture of the County of Durham*, pp. 8–9; Durham County Local History Society, *An Historical Atlas of County Durham* (Durham, 1992), p. 6.

⁷⁴ M. James, *Family, Lineage, and Civil Society: a Study of Society, Politics, and Mentality in the Durham Region, 1500–1640* (Oxford, 1974), p. 5; *The Itinerary of John Leland in or About the Years 1535–1543 Vol. 1*, ed. L. Toulmin Smith (London, 1907), pp. 69–77.

crops of wheat, beans, clover, and rich old grazing pastures'. The adjoining East Durham plateau stretching north of Hart and Bishop Middleham, by contrast, produced 'miserable crops of corn'. On the poorer soils of the region, Bailey observed very low yields of oats.⁷⁵

The Durham Priory parishes from which the tithe evidence used in this study derives were confined to the eastern parts of the region, extending over some of the most fertile soils and also onto the less productive land of the East Durham plateau and Pennine Spurs (map 2). Only Billingham parish is situated in the best agricultural land in the region, the fertile clay loams of the southeast. Jarrow parish, along with parts of Durham St Oswald and Pittington, are situated on the fertile soils of the Tyne and Wear lowlands. The largest concentration of priory parishes is to be found, however, on the East Durham plateau. Only a small part of Durham St Oswald parish extends into the Pennine Spurs and none of the very large parishes of the High Pennines was appropriated to the priory.

Table 3. Fifteenth-century harvest composition in selected townships from three geographical zones in the Tyne Tees region (percentages)

	Billingham (Tees lowlands)	Aycliffe (East Durham plateau)	Tyne and Wear lowlands*
wheat	22	25	31
barley	44	16	19
oats	14	34	45
legumes	20	25	5

* Given the paucity of data from this zone, figures were used from a selection of townships: Houghall, Shincliffe, Old Durham (Durham St Oswald), North Sherburn (Pittington), Westoe (Jarrow)
Source: Durham Priory grain tithe receipts from years when tithes were kept in hand.

Studies of other parts of northern England have shown a concentration on oats which 'in places amounted almost to a monoculture' because of the acid soils and wet climate. For example, on the demesnes of Bolton Priory, situated around Skipton in the old West Riding of Yorkshire, oats represented 75 to 80 per cent of total production in the early fourteenth century.⁷⁶ By contrast, the lowland parts of the Tyne Tees region were well-suited to arable cultivation. Yields on Durham priory seigneurial demesnes were comparable with those further south.⁷⁷ None of the demesnes in the region examined by Campbell, either before or after the Black Death, employed the cropping system based on the 'extensive cultivation of oats' often found in northern and western areas of the kingdom where there were 'hard winters, cool summers, high rainfall, and acid soils'. Instead, the

⁷⁵ Bailey, *Agriculture of the County of Durham*, pp. 8, 128.

⁷⁶ E. Miller, 'Farming in Northern England During the Eleventh and Twelfth Centuries', *Northern History* 11 (1976), 9; I. Kershaw, *Bolton Priory: the Economy of a Northern Monastery 1286–1325* (Oxford, 1973), pp. 38–9.

⁷⁷ E. M. Halcrow, 'The Decline of Demesne Farming on the Estates of Durham Cathedral Priory', *Economic History Review* 7 (1954–5), 347.

cropping systems around Durham tended to be those found in other lowland regions.⁷⁸

Table 3 shows tithe output from townships in each of the three main geographical subregions in which priory parishes were situated. The evidence suggests that the cropping patterns on seigneurial and non-seigneurial land in the region were not those associated with poor soils. Oats accounted for less than half of total output in all three of the samples considered, and as little as 14 per cent in the most fertile soils of the region. It is likely that the barley was spring-sown, given the greater frequency of severe winters in the North-east than in areas further south, but even so the soil seems to have been of sufficiently high quality to mean barley featured prominently in the harvests.⁷⁹ The large quantities of legumes produced in the Tees lowlands and East Durham plateau regions may be interpreted as a mechanism for reducing fallow and permitting more intensive cropping. The sowing of nitrogenous legumes was one way in which medieval cultivators could replenish the nutrients in the soil whilst continuing cultivation. However, the data in table 3 are more likely to indicate the 'extensive cultivation of legumes' which Campbell observed in the manorial demesnes of the region after the Black Death. Such cropping patterns were adopted to support the pastoral sector by providing large quantities of fodder.⁸⁰ Overall, the evidence in table 3 reflects the fertility of the land in lowland Durham but also the importance of pastoral husbandry in the region in the fifteenth century.

Table 3 also shows that variations in soil type within the region affected cropping. This is most apparent in the greater concentration of barley in the strong loam of the Tees lowlands, conditions characteristic of other barley-growing zones on the east coast of England.⁸¹ The less fertile soils of Aycliffe and the Tyne and Wear lowlands are not so well suited to barley cultivation, and less demanding oats were correspondingly more important in these areas.⁸²

Crops other than cereals and legumes seem to have been grown in much smaller quantities. In 1448 5s. were received for the hay, flax and hemp tithes of Old Durham, a township just outside the city. It appears that the scale of production of flax and hemp was small, however, since the garb tithes of the same township were sold for over ten times as much in the same year, realising £2 15s. 0d.⁸³ It is difficult to be more precise about this aspect of arable production since, as mentioned above, such crops were counted as small tithes and therefore usually collected by the vicars, meaning there is far less record of their receipt in the priory accounting material.

Cropping patterns in the Durham Priory parishes in the Tyne Tees region are comparable with those in other parts of lowland England. The same is true of some aspects of the structure and organisation of the agricultural communities. Unlike the isolated hamlets of the highland regions, the Durham Priory parishes

⁷⁸ B. M. S. Campbell, *English Seigneurial Agriculture, 1250–1450* (Cambridge, 2000), pp. 249–302, 442–3.

⁷⁹ J. A. S. Watson and J. A. More, *Agriculture: the Science and Practice of British Farming* (Edinburgh, 1945), pp. 231–2.

⁸⁰ Campbell, *Seigneurial Agriculture*, pp. 276, 284–5, 442–3.

⁸¹ Watson and More, *Agriculture*, p. 230.

⁸² *Ibid.*, p. 214.

⁸³ DCM, account of the proctor of St Margaret's 1448–9; DCM, hostiller's account 1448–9.

seem to have contained nucleated settlements with open fields in the late middle ages.⁸⁴ A fifteenth-century terrier from Castle Eden in Monk Hesleden parish, for example, 'shows the land entirely divided between an east field, a south field and a west field' of approximately equal size.⁸⁵ However, even the lowland parts of the Tyne Tees region do not conform to the picture of champion England as 'densely occupied'.⁸⁶ Although Dunsford and Harris showed that grants of waste and the creation of moorland farms were concentrated in highland western regions, piecemeal waste enclosure demonstrates the relative abundance of land available for cultivation even in the lowland areas.⁸⁷ Britnell's detailed work on charters shows this type of waste enclosure in operation in the section of the East Durham plateau which contained the Durham Priory parishes of Pitlington and Monk Hesleden. The relative availability of land in the region is also reflected in a substantial body of evidence for the light subdivision of fields around Durham. It appears that tenants' strips of land were interspersed amongst a 'loose federation of furlongs' with gaps for meadow and grazing between them. This type of field structure would seem to reflect the much lower pressure for land in the region than further south. The population density in the area between Durham and the sea was only a fraction of levels in East Anglia, although townships were probably larger in the fertile southeast corner of the region.⁸⁸

The relative availability of land in the Tyne Tees region by comparison with areas further south may be associated with the thinness of the evidence for communal farming, that is farming dependent upon joint decision-making. Miller thought he observed a communal three-course rotation in operation in some Durham villages. He pointed out approximately equal sown acreages of winter- and spring-sown crops and fallow on the manors of Quarrington, belonging to the bishop, and Witton Gilbert, belonging to the priory almoner, before the Black Death. This evidence is ambiguous, however, since sown acreages are not given consistently.⁸⁹ Records of the transfer of tenant land sometimes indicate roughly equal acreages of winter- and spring-sown crops. Other instances do not show this pattern and suggest a predominance of spring-sown crops, like that indicated in table 3.⁹⁰ All in all, there is no clear evidence for crop rotations which might

⁸⁴ James, *Family, Lineage, and Civil Society*, p. 5; R. A. Butlin, 'Field Systems of Northumberland and Durham', in *Studies of Field Systems in the British Isles*, ed. A. R. H. Baker and R. A. Butlin (Cambridge, 1973), pp. 99–132. Further hints of the existence of an open field system in some Durham villages are provided by field name elements: Butlin, 'Field Systems of Northumberland and Durham', pp. 130–2; *The Victoria History of the County of Durham*: 2, ed. W. Page (London, 1907), pp. 195–6; H. L. Gray, *English Field Systems* (Cambridge, Mass., 1915), pp. 36, 462–3; T. Lomas, 'Land and People in South-East Durham in the Later Middle Ages' (unpublished Ph.D. thesis, Teesside Polytechnic, 1976), pp. 41–2.

⁸⁵ R. H. Britnell, 'Fields, Farms and Sun-Division in a Moorland Region, 1100–1400', *Agricultural History Review* 52 (2004), 25.

⁸⁶ Postan, 'Medieval Agrarian Society', p. 556; Britnell, 'Fields, Farms and Sun-Division', 25.

⁸⁷ H. M. Dunsford and S. J. Harris, 'Colonization of the Wasteland in County Durham, 1100–1400', *Economic History Review* 56 (2003), 41–2.

⁸⁸ Britnell, 'Fields, Farms and Sun-Division'; Miller, 'Farming in Northern England', 9–10.

⁸⁹ Miller, 'Farming in Northern England', 8; *Bishop Hatfield's Survey*, ed. W. Greenwell (Surtees Society 32, 1856), pp. 229–36; *Extracts from the Account Rolls of the Abbey of Durham*: 1, ed. J. T. Fowler (Surtees Society 99, 1898), pp. 199–200.

⁹⁰ Lomas, 'Land and People' (unpublished thesis), pp. 41–8; *Halmota*, ed. Longstaffe and Booth, pp. 1, 120–1, 133.

be associated with communal farming. Even so, the application of regulations for the pasturing of beasts in the open fields of the region does at least indicate some communal decision-making.⁹¹ It is most likely that a combination of communal and individual farming was practised in the Durham villages, with tenants holding some strips in open fields with a predetermined crop rotation in addition to various closes where they had more freedom to make decisions independently.⁹²

Perhaps the most salient difference between the villages of Durham and those further south was the availability of pasture. Before the Black Death many villagers in the more densely populated parts of southern and midland England, even those well-suited to sheep- and cattle-farming, kept few or no animals because of the lack of available land for meadow and pasture.⁹³ By contrast, even in the lowland areas of the Tyne Tees region, common pasture was abundant. It usually took the form of moorland both within and without the township boundaries.⁹⁴ Stock farming was common even in the fertile arable areas in the southeast between the Tees and the sea.⁹⁵ For example, when William Jakson of Cowpen Bewley took on the manor of Belasis in Billingham parish in 1373, his lease included not only 221 sown arable acres but also eleven acres of hay meadow.⁹⁶

The availability of meadow and pasture should not obscure the fact that lowland Durham was principally an area of arable farming. This is suggested by the different allocation of tithe income in the regions where Durham Priory held appropriated parishes. The voluminous priory accounting material contains scarcely any record of livestock production between the Tyne and Tees. The reason for this is, as indicated above, that the livestock tithes were counted as small tithes and therefore left for the vicars to collect. This contrasts with the system in the priory's Northumberland parishes where the livestock tithes were collected by the priory's agents and listed in accounts presented to the mother house. In this region, the vicars were not left with such a valuable component of tithe income. This variation in institutional policy concerning tithe allocation is likely to have been a result of the lesser importance of livestock-farming south of the Tyne.⁹⁷

Like in other economies where agriculture was the principal occupation, some people in the Tyne Tees region were occupied by subsidiary 'service' industries. In Sherburn in the late fourteenth century, for example, the tenants paid between them for the use of the common oven and forge along with the right to brew beer.⁹⁸ Milling was another important 'service' industry and most of the larger priory townships contained a mill which was leased out.⁹⁹ Other 'industrial' activities

⁹¹ Lomas, 'Land and People' (unpublished thesis), p. 46.

⁹² Such a system is documented in other agricultural communities, such as Laxton: C. S. Orwin and C. S. Orwin, *The Open Fields* (Oxford, 1967), p. 131.

⁹³ Postan, 'Medieval Agrarian Society', pp. 554–6; C. Dyer, *Standards of Living in the Later Middle Ages: Social Change in England c. 1200–1520* (Cambridge, 1998), pp. 128–30.

⁹⁴ Britnell, 'Fields, Farms and Sun-Division', 32.

⁹⁵ Miller, 'Farming in Northern England', 12.

⁹⁶ *Halmota*, ed. Longstaffe and Booth, pp. 120–1.

⁹⁷ Dodds, 'Managing Tithes', 128–9.

⁹⁸ *Hatfield Survey*, ed. Greenwell, p. 149.

⁹⁹ E.g. *Priory Rentals*, ed. Lomas and Piper, p. 65.

were less closely connected with agriculture. There were large numbers of fisheries on the region's rivers and those living in coastal settlements, including the priory township of South Shields, also engaged in sea fishing.¹⁰⁰ The north-east coalfield was the most important in England during the middle ages and the coal industry was a source of income and employment in the Durham Priory parishes.¹⁰¹ Many pits were very small, such as that at Hett near Kirk Merrington which yielded a tithe of 10d. in 1430–1. Others were larger, such as the operation run by the monks of Finchale Priory at Morehouseclose at the end of the fifteenth century which required a horse-drawn pump.¹⁰²

Patterns of landholding at a seigneurial and tenant level and the nature of tenure and the exercise of authority in the Tyne Tees region show features both familiar and unfamiliar from other parts of England. The Durham region was dominated by two major ecclesiastical landlords, the bishopric and the priory of Durham, the estates of which were completely separate by the late middle ages. The Nevilles were the most significant lay landlord in the region but the size of their estate did not rival that of the bishopric and priory. Next in importance were the larger gentry families including the Lumleys and Claxtons.¹⁰³ The Durham Priory bursars held land in over half the townships from which the monks of the priory and its dependencies collected tithes. In many cases, these holdings were very substantial, consisting of demesne land, free and customary holdings.¹⁰⁴ If the estates of other obedientiaries and heads of dependent cells are included then the role of the monks as landlords in the appropriated parishes is even more significant. The bishops were also important landlords in the priory appropriated parishes, having an interest in seventeen townships from which the monks received tithes. Other landlords were present in priory parishes too, such as the Hyltons who were seised of a clutch of townships in Monkwearmouth parish, although they played a relatively minor role.

There has already been reference to 'peasants' and 'the peasantry' but greater precision is needed in applying this terminology to the inhabitants and tenants of the townships in the Tyne Tees region and to those paying tithes to Durham Priory. Postan defined a 'peasant' as someone with a holding which provided a 'subsistence income', that is enough income to preclude regular dependence on wages. The holding was not large enough to provide a significant income from rent, nor was it large enough to be worked primarily by hired labour.¹⁰⁵ As Postan went on to discuss, this is rather a precise definition. In Durham, for example, it would preclude William Coatham who rented only a cottage and

¹⁰⁰ Ibid., p. 66. DCM, account of the master of Jarrow 1432–3; DCM, account of the master of Jarrow 1484–5; DCM, account of the master of Wearmouth 1467–8; DCM, account of the master of Wearmouth 1382–3.

¹⁰¹ J. Hatcher, *The History of the British Coal Industry 1: Before 1700: Towards the Age of Coal* (Oxford, 1993), pp. 70–7. DCM, hostiller's account 1354–5; DCM, hostiller's account 1379–80.

¹⁰² DCM, communar's account 1430–1; *Priory of Finchale*, ed. Raine, p. ccxci.

¹⁰³ James, *Family, Lineage, and Civil Society*, pp. 30–1.

¹⁰⁴ Quantifying the proportion of townships from which tithes were received where the bursars also held land is complicated by changing ways of referring to units of tithe collection. However, the bursar's importance as a landlord in the parishes appropriated to the priory and its dependencies is clear from a comparison of map 1 and the bursar's estate as listed and mapped in *Priory Rentals*, ed. Lomas and Piper.

¹⁰⁵ Postan, 'Medieval Agrarian Society', p. 620.

garden in Pittington around the turn of the fifteenth century. This holding would not have provided a 'subsistence income' and Coatham earned this by working as a *famulus*, a full-time salaried worker, on the local demesne belonging to the monks of Durham.¹⁰⁶ It would also preclude the Denom brothers, whom Pollard traces back to a neif freed in Billingham in the late fourteenth century, and who leased Coatsay Moor in the second half of the fifteenth century. The garb tithes of Coatsay Moor sold consistently for £2, suggesting annual grain output was worth something over £20. The lessees must therefore have hired labour or sublet parts of the farm.¹⁰⁷

The term 'peasant' is used more broadly in this study than in Postan's definition. It covers those producing a substantial proportion of their own food on a holding run at least partly by family labour. In other words, as in the definition supplied by Ellis, 'peasants' were involved in the markets both for produce and for labour but their dependence on such markets was partial.¹⁰⁸ This definition cannot always be applied with precision and may still exclude individuals such as William Coatham. However, many landholdings in the Tyne Tees region in the middle ages are likely to have been managed by families partly for their own subsistence, even if substantial amounts of labour had to be bought in the case of the larger farms and labour had to be sold regularly by families with very small holdings.

The importance of subsistence farming and family labour in the region is reflected in the large number of holdings of between ten and thirty acres, roughly the amount of land needed to sustain a family.¹⁰⁹ This can be demonstrated by a brief description of landholding on the estate of the priory, the predominant landholder in the parishes considered here. In the early fourteenth century, just over 10 per cent of priory holdings in the Tyne Tees region were freehold. Although there were some large freeholds of over one hundred acres, the majority were between thirty and sixty acres, or fragments of original freeholds of this size. This is similar to the size of the customary holdings, most of which were of thirty acres. There were also smaller customary holdings, many of which were twelve acres in size, but including cottages with fewer than ten acres, and irregularly sized holdings which were probably the result of assarting and fragmentation. In the period after the Black Death, the size of the average holding increased markedly and, by the late fourteenth century, tenants often held several ancient tenements and portions of leased demesnes. Over the course of the late fourteenth, fifteenth and early sixteenth centuries, landholding was rationalised by the introduction of syndicates, that is groups of tenants who leased whole townships between them.

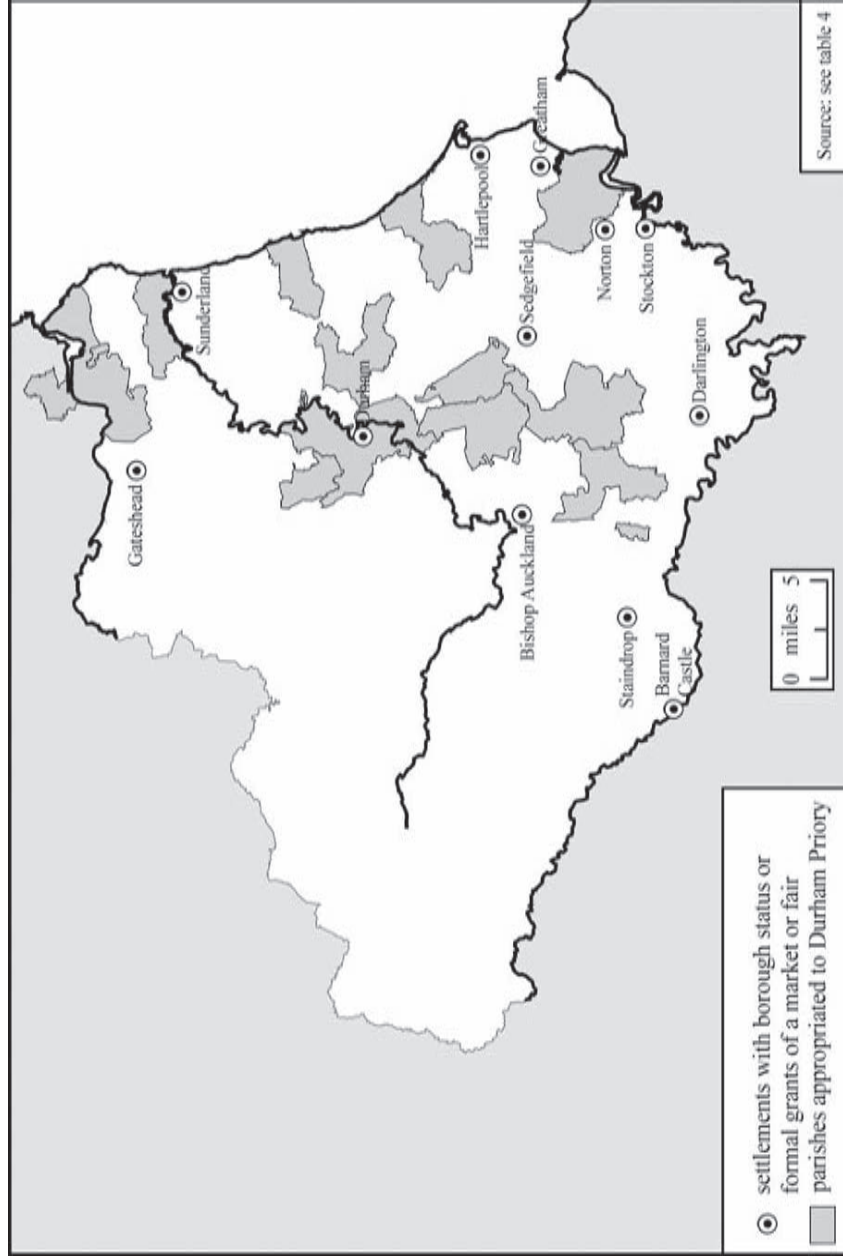
¹⁰⁶ B. Dodds, 'Peasants, Landlords and Production between the Tyne and Tees, 1349–1450', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), p. 189.

¹⁰⁷ A. J. Pollard, *North-Eastern England during the Wars of the Roses: Lay Society, War, and Politics 1450–1500* (Oxford, 1990), p. 65; Lomas, 'Durham Cathedral Priory as a Landowner and a Landlord' (unpublished thesis), p. 62. By 1495–6 two individuals named Thomas and John Denom, presumably descendants of the brothers of the same name recorded as farmers in 1457–8, held the lease with Richard Taylor: *Priory Rentals*, ed. Lomas and Piper, p. 171.

¹⁰⁸ F. Ellis, *Peasant Economics: Farm Households and Agrarian Development* (Cambridge, 1993), pp. 9–13.

¹⁰⁹ Dyer, *Standards of Living*, pp. 109–18; E. Miller and J. Hatcher, *Medieval England: Rural Society and Economic Change, 1086–1348* (London, 1978), p. 161.

Map 3. Settlements and markets and/or fairs in the middle ages between the Tyne and Tees



Some small cottage holdings remained, however, and it appears that others were held from the larger tenants rather than from the priory.¹¹⁰

Clearly, some holdings from which tithe was collected were heavily dependent on markets for produce and labour and cannot really be described as 'peasant' holdings. This applies in particular to manorial demesnes. Output from Durham Priory manorial demesnes was only included in tithe receipts after leasing. However, other landlords also had demesne lands in parishes appropriated to Durham Priory. This applied to bishopric lands in particular which included, for example, demesnes of 420 acres and 640 acres at Heighington and Ricknall, both situated in priory parishes.¹¹¹ Although demesnes were sometimes leased piecemeal, and therefore not cultivated as single large farms, they were also often managed directly by their lord or leased to one tenant.¹¹² Insufficient information exists on landholding in priory parishes to describe the exact size of the holdings from which tithe was collected in each township throughout the period. Even so, it is clear that the term 'peasant' must be used carefully when applied to the output estimates based on tithe data. It is safer to use terms such as 'tithe payers' when referring to all producers contributing tithe. However, as indicated by the previous chapter, the concept of 'peasant' farming is important in this study. When the microeconomics of 'peasant' farmers are compared with and distinguished from those of other types of producers, as in chapter 6, the types of holdings from which tithe output derives must be considered further.

The evidence for the role of the market in the rural economy of the region is indirect. It has been argued above that subsistence farming was important but tenants are likely to have sold a proportion of their output. This is suggested by the cash payments they were required to make. Although it seems that the priory's bondmen held their land in return for labour services and were not required to pay money rents, in reality cash must still have passed from these tenants to the priory's officials because of the frequency with which these services were commuted. Likewise, there were many other types of priory tenants owing cash in addition to or instead of labour services.¹¹³ On the bishopric estate, the role of cash in payments is clearer. For example, Stephen of Cassop was a bondman who held thirty acres in the bishop's township of Sherburn in the late fourteenth century. He was expected to make a series of cash payments throughout the year amounting to £1 3s. 4d., not unusual by comparison with those made by bondmen in the bishop's other townships.¹¹⁴ Stephen's payments were also not dissimilar to those made by peasants in southern England. Robert le Kyng, for example, also held around thirty acres in the village of Bishop's Cleeve in Gloucestershire in 1299 and his annual rent amounted to £1 2s. 0d. excluding extra dues.¹¹⁵ There certainly existed a range of opportunities for the marketing of output from the

¹¹⁰ R. A. Lomas, 'Developments in Land Tenure on the Prior of Durham's Estate in the Later Middle Ages', *Northern History* 13 (1977); R. A. Lomas, 'The Priory of Durham and its Demesnes in the Fourteenth and Fifteenth Centuries', *Economic History Review* 31 (1978), 341–7; Britnell, 'Fields, Farms and Sun-Division', 33–7.

¹¹¹ *Hatfield Survey*, ed. Greenwell, pp. 19, 25.

¹¹² For examples of each see: *Ibid.*, pp. 19, 132–3.

¹¹³ Lomas, 'Land Tenure', 30–2, 37.

¹¹⁴ *Hatfield Survey*, ed. Greenwell, p. 148.

¹¹⁵ Dyer, *Standards of Living*, p. 115.

lowland Durham parishes, including not only the formal markets and fairs shown on map 3 but also less formal marketing centres and the city of Newcastle upon Tyne which lies outside the region.

Some historians have argued that the systems of landholding, status and seigneurial authority in Durham were fundamentally different from those elsewhere, perhaps because of their pre-Saxon origins.¹¹⁶ Most apparent when comparing Durham villages with their counterparts in the midlands and the south is the lack of association between landholding and status. The personally unfree were known as *nativi* and they faced a wide range of disabilities which were sporadically enforced. However, the *nativi* probably numbered less than one-fifth of the total tenantry and customary land was not only held by unfree tenants. The other customary tenants, including some bondmen, husbandmen and cotmen, formed a large group whose status is difficult to categorise. They were personally free, and did not suffer many of the disabilities of the *nativi*, but many did perform labour services and pay dues which would have been thought of as servile.¹¹⁷

If the holders of customary land in the region were sometimes free, then the converse is also true: the holders of free land sometimes performed services usually considered servile. This curious mixture of freeholding and servility is most commonly associated with drengage tenure. Although this word is hardly found in the records of the priory estate, it does feature in the Hatfield Survey of the bishopric estate.¹¹⁸ Drengs and some other free tenants appear to have owed labour services which sometimes took the form of boon-works at harvest or ploughing time but could also be less familiar. For example, Thomas of Heighington and Adam del Stanes, described as free tenants in the bishopric township of Middridge, were expected to run errands for the bishop.¹¹⁹

Although Jolliffe characterised England north of the Humber as an area of light labour services, those owed by customary tenants on the estates of the bishop and priory of Durham between the Tyne and Tees often fall into Miller and Hatcher's category of 'heavy villein services', defined as 'say two or more days each week'.¹²⁰ Some priory customary tenants paid no money rent but performed fairly heavy labour services for their holdings. The Pitlington bondmen, for example, worked for their lord three days a week between July and September and two days a week for the rest of the year, regular commitments supplemented by boon-

¹¹⁶ J. E. A. Jolliffe, 'Northumbrian Institutions', *English Historical Review* 161 (1926).

¹¹⁷ *Ibid.*, 38–9; P. L. Larson, 'Conflict and Compromise in the Late Medieval Countryside: Lords and Peasants in Durham, 1349–1430' (unpublished Ph.D. thesis, Rutgers, The State University of New Jersey, 2004), pp. 83–90; T. Lomas, 'South-East Durham: Late Fourteenth and Fifteenth Centuries', in *The Peasant Land Market in Medieval England*, ed. P. D. A. Harvey (Oxford, 1984), pp. 282–3; Lomas, 'Land Tenure', 30–5.

¹¹⁸ *Hatfield Survey*, ed. Greenwell, pp. 29, 172, 177, 193; F. W. Maitland, 'Northumbrian Tenures', *English Historical Review* 5 (1890); Jolliffe, 'Northumbrian Institutions', 4–12; Lomas, 'Land Tenure', 29–30; C. M. Fraser, 'Gilly-Corn and the Custom of the Convent of Durham', *Archaeologia Aeliana* 33 (1955), 43–4. Piper singles out Wolviston as the priory estate 'where references to drengage are conspicuous': A. J. Piper, 'Evidence of Accounting and Local Estate Services at Durham, c. 1240', *Archives* 20 (1992), 38.

¹¹⁹ *Hatfield Survey*, ed. Greenwell, p. 20.

¹²⁰ Jolliffe, 'Northumbrian Institutions', 2, 4–5; Miller and Hatcher, *Rural Society*, p. 123.

works at others times.¹²¹ The obligations of the customary tenants of the bishop were similar. In Bishop Middleham, for example, bondmen worked three days a week for the whole year, with one week holidays at Easter and Pentecost and thirteen days at Christmas. At harvest time they performed additional works.¹²² There were estates in other parts of England where labour services were much more onerous, with villeins owing labour for up to five days a week, but the tenants of the priory and the bishop between the Tyne and Tees do not seem to have been particularly lightly burdened.¹²³

Although Durham was part of the great liberty of the Palatinate, in which the bishops enjoyed nearly all the rights of a king, day-to-day encounters with authority were not so different from elsewhere. Inheritance practices do not seem to have been unusual.¹²⁴ Although the court system appears very different to that further south, with the halmote courts performing the functions of both manorial and hundredal courts, tenants brought the same sorts of cases and, in Larson's judgment, these were generally resolved fairly and speedily.¹²⁵ One feature which must have affected peasants and other tenants was the closeness with which both bishop and prior supervised their estates. The priors, for example, sometimes even presided over the halmote courts in person. Larson describes this as 'a two-edged sword for the peasantry': they benefited from the possibility of negotiation but were subjected to lords with detailed knowledge of their estates.¹²⁶ In terms of the local village officials, the reeve and various minor offices were similar to those found further south. More unusual was the village pinder who looked after the pinfold, being responsible for impounding both animals and grain, sometimes against the will of the villagers.¹²⁷

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In many ways, the differences between the rural economy and society in the Durham region and areas further south were more apparent than real. Though geographically distant, the landscape of the lowland Durham parishes was capable of supporting arable cultivation similar to that in more central parts of England. Though some of the institutions of landholding and lordship appear unfamiliar and antiquated, many Durham producers had similar obligations to their counterparts on estates further south. Nor were tenants isolated from the market in lowland Durham. The conditions by which they held land made it necessary to market a proportion of their output and a network of market centres in the region made this possible. Perhaps the most important difference to emerge from this discussion is the abundance of land and pastoral resources in the Tyne Tees region even in the period before the Black Death. This forms a marked contrast with the pressure on land elsewhere in the kingdom. Given the importance of

¹²¹ Lomas, 'Land Tenure', 30–1.

¹²² *Hatfield Survey*, ed. Greenwell, p. 183.

¹²³ S. H. Rigby, *English Society in the Later Middle Ages: Class, Status and Gender* (London, 1995), p. 30.

¹²⁴ Larson, 'Conflict and Compromise' (unpublished thesis), p. 44.

¹²⁵ P. L. Larson, 'Local Law Courts in Late Medieval Durham', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005).

¹²⁶ Larson, 'Conflict and Compromise' (unpublished thesis), p. 66.

¹²⁷ *Ibid.*, pp. 66–73.

the relationship between population and resources in historians' interpretation of the nature of long-term economic change in the middle ages, this feature of the region under consideration here provides an exciting opportunity to test the causation of change in the countryside.

3

War and Weather, 1270–1348

The twelfth and thirteenth centuries must have seen significant increases in aggregate levels of grain output in England. Manorial accounts show the development of complex directly-managed networks of grain-producing manors and, although less is known about the non-seigneurial sector, there was considerable expansion of the area under cultivation to judge from the evidence of forest clearance and of drainage from sea, marsh and fen. Increasing demand for grain is partly explained by urban and commercial expansion but population growth in the countryside was also a major factor.¹ Expansion could not continue indefinitely, however, and in some places the arable area reached limits beyond which it could be extended no further: the countryside had become densely populated and many holdings were very small. The notorious crisis years of the 1310s, when grain prices reached their highest recorded levels, descended upon communities highly vulnerable to any fluctuations in food supply.² At the same time, the economy was put under unprecedented pressure by the fiscal demands incurred with the renewal of conflict with the Scots in the 1290s and then the French in the 1330s.³

North-east England is of particular interest in this pre-Black Death period because the factors influencing the expansion of production, and its curtailment, were not the same as those affecting areas further south. Pressure on resources was never as intense, with waste land remaining relatively abundant. However, the rural economy was affected by additional regional factors such as the depredations of Scots raiders. The tithe evidence, in conjunction with other sources, sheds light on the chronology and causation of the expansion and contraction of grain production in these unusual circumstances.

¹ R. H. Britnell, *Britain and Ireland 1050–1530: Economy and Society* (Oxford, 2004), pp. 185–95; R. H. Britnell, *The Commercialisation of English Society, 1000–1500* (Manchester, 1996), pp. 102–4; R. M. Smith, ‘Demographic Developments in Rural England, 1300–48: a Survey’, in *Before the Black Death: Studies in the ‘Crisis’ of the Early Fourteenth Century*, ed. B. M. S. Campbell (Manchester, 1991), pp. 37–49.

² For recent treatments, with extensive bibliography: M. Bailey, ‘Peasant Welfare in England, 1290–1348’, *Economic History Review* 51 (1998); B. M. S. Campbell, ‘The Agrarian Problem in the Early Fourteenth Century’, *Past and Present* 188 (2005).

³ J. R. Maddicott, ‘The English Peasantry and the Demands of the Crown 1294–1341’, in *Landlords, Peasants and Politics in Medieval England*, ed. T. H. Aston (Cambridge, 1987), p. 356.

Expansion

The first section of this chapter examines the timing of expansion in grain production in the Tyne Tees region up to the early fourteenth century using the tithe data from 1270 onwards and less direct evidence from earlier periods. This is then compared with evidence for expansion in other sectors of the economy including towns, trade and industry. Finally, some comment is made on the causes of rising grain output with an attempt to distinguish the effects of urban and commercial expansion and demographic growth in the countryside.

In parts of southern and midland England the limits of expansion of the arable area had long since been reached by 1300 but examples are known of areas outside these central regions where expansion continued across the turn of the fourteenth century.⁴ Figure 2 suggests that, in the Tyne Tees region, grain production was still increasing around 1300, although there were bad years in the early 1290s. This upward trend in grain production is reflected in recent research on the colonisation of wasteland in the region. Although the detailed surviving evidence relates largely to the carving out of new moorland farms in northern and western areas, where waste was more abundant, it is likely that the area under arable cultivation also increased in the priory parishes through extensions to township fields.⁵

Other evidence suggests that the increase in grain output from 1270 to c. 1311 might have been preceded by an earlier phase of expansion. The survey of Durham bishopric lands of c. 1183, known as the Boldon Book, contains references to new settlement. Three Thickleys are referred to, for example, including Thicklely itself, in Heighington parish near the township of Redworth, 'the new town near Thicklely' and 'Old Thicklely, which was made out of the territory of Redworth'. This suggests two earlier phases of expansion around Thicklely.⁶ Roberts' examination of the settlement morphology in the area led him to conclude that there had been significant 're-settlement and re-organisation' before 1200. This is reflected in the 'green villages' which Roberts interprets as reorganised versions of older settlements.⁷ Austin has supported this suggestion and postulated a link between the 'nucleative and centralising impetus' in the villages and the development of towns in the region.⁸

On the basis of this evidence, it seems that grain production increased in the region over the twelfth and early thirteenth centuries but the limits of expansion were clearly not reached during this early phase. Hallam calculated that only 16 per cent of the tenants recorded in Boldon Book held ten acres of land or less,

⁴ A. J. L. Winchester, *Landscape and Society in Medieval Cumbria* (Edinburgh, 1987), p. 39; E. Miller, 'New Settlement: Northern England', in *The Agrarian History of England and Wales, 2: 1042–1350*, ed. H. E. Hallam (Cambridge, 1988); J. Hatcher, 'New Settlement: South-Western England', in *The Agrarian History of England and Wales, 2: 1042–1350*, ed. H. E. Hallam (Cambridge, 1988).

⁵ H. M. Dunsford and S. J. Harris, 'Colonization of the Wasteland in County Durham, 1100–1400', *Economic History Review* 56 (2003), 49–54; Britnell, *Britain and Ireland*, p. 166.

⁶ *Boldon Buke*, ed. W. Greenwell (Surtees Society 25, 1852), pp. 22–3, 59–60; Miller, 'New Settlement: Northern England', p. 247.

⁷ B. K. Roberts, *The Green Villages of County Durham: a Study in Historical Geography* (Durham, 1977), pp. 41–5.

⁸ D. Austin, *The Deserted Medieval Village of Thrislington, County Durham: Excavations 1973–74* (Lincoln, 1989), pp. 164–71.

a figure low by comparison with elsewhere.⁹ Boldon Book also records some empty holdings. In Garmondsway in Bishop Middleham parish, for example, the bishop held '4 oxgangs of his own purchase, which lie waste'.¹⁰ The absence of another survey of bishopric lands before the Hatfield Survey of around 1380 means it is difficult to connect the expansion apparent in figure 2 with that in the late twelfth century. However, Dunsford and Harris used the chronology of the surviving grants of wasteland in the region to reveal two phases of significant expansion, the first in the latter half of the twelfth century and the second in the latter half of the thirteenth and early fourteenth centuries. The first phase coincides with the evidence for 'reorganisation and resettlement' considered above and the second with the period of expansion evident in figure 2.¹¹

Grain production probably expanded from a very low level indeed during the twelfth century. There is plenty of evidence of pre-Norman rural settlement between the Tyne and Tees where architectural remains, place names and later references to apparently ancient renders show origins in the Anglo-Saxon period or earlier.¹² However, William the Conqueror's harsh reprisals in the north following the 1069 rebellion are well-known. Soldiers were despatched with specific orders to harry the villages and grain supplies were burned, livestock were killed and agricultural implements destroyed.¹³ In the words of Symeon of Durham, the area was 'deprived of anyone to cultivate it for nine years ... [t]here was no village inhabited between York and Durham'. He described the Conqueror's army 'over all the places between the Tees and Tyne' which had been deserted by their inhabitants and were 'one continued solitude'.¹⁴ There was further plundering when Malcolm Canmore launched his second invasion of England in 1070, Cumberland having been taken in 1061. His men 'ravaged with fierce devastation the whole of Teesdale'.¹⁵ There were further political disturbances in the north during the 1070s and the Conqueror's half brother was despatched to harry Northumbria in 1080.¹⁶ Waste was recorded in over half the villis in the North Riding of Yorkshire listed in Domesday Book and, although the survey did not extend north of the Tees, chronicle accounts suggest the situation around Durham might have been comparable.¹⁷ Serious reduction of population and grain production in the late eleventh century helps explain the scope for subsequent expansion.

⁹ H. E. Hallam, 'Rural England and Wales, 1042–1350', in *The Agrarian History of England and Wales, 2: 1042–1350*, ed. H. E. Hallam (Cambridge, 1988), p. 991.

¹⁰ *Boldon Buke*, ed. Greenwell, pp. 12, 51.

¹¹ Dunsford and Harris, 'Colonization', 48–9.

¹² Roberts, *Green Villages*, pp. 8, 41.

¹³ W. E. Kapelle, *The Norman Conquest of the North: the Region and its Transformation, 1000–1135* (London, 1979), pp. 117–18.

¹⁴ *Simeon of Durham: a History of the Kings of England*, ed. J. Stevenson (Lampeter, 1987), pp. 137–8.

¹⁵ *Ibid.*, p. 138; Kapelle, *Conquest of the North*, pp. 122–3.

¹⁶ *Simeon of Durham: A History of the Kings of England*, ed. Stevenson, pp. 151–2; Kapelle, *Conquest of the North*, pp. 135–41.

¹⁷ Britnell, *Britain and Ireland*, p. 111.

Table 4. Towns between the Tyne and Tees c. 1040–1350

Town	Earliest references to borough status, markets and fairs
Barnard Castle	borough c. 1175; market and fair 1293
Bishop Auckland	borough 1242–3; market 1307
Darlington	borough 1183; fair 1217; market 1293
Durham	market referred to c. 1040; 4 boroughs by 1130
Gateshead	borough 1153x95
Hartlepool	borough 1162x85
Norton	market 1109
Sedgefield	fair 1312
Stockton	borough 1293; market and fair 1310
Staindrop	market and fair 1379
Sunderland	borough 1180x86

See map 3 for the locations of these settlements.

Sources: R. H. Britnell, 'Boroughs, Markets and Trade in Northern England, 1000–1216' in *Progress and Problems in Medieval England*, ed. R. H. Britnell and J. Hatcher (Cambridge, 1996), p. 66; S. Letters, *Online Gazetteer of Markets and Fairs in England and Wales to 1516* available at <http://www.history.ac.uk/cmh/gaz/gazweb2.html> (viewed November 2006); C. M. Newman, 'Economy and Society in North-Eastern Market Towns: Darlington and Northallerton in the Later Middle Ages,' in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), p. 134.

The non-arable sectors of the regional economy also expanded in the twelfth and thirteenth centuries. Table 4 shows the transformation of the institutions of commerce between Tyne and Tees. There is evidence of trade before the Norman Conquest at Durham but commercialisation in the North-east was probably very limited. Distance from the continent meant that overseas trade must have been irregular and infrequent, although it does appear there were occasional links with Norway.¹⁸ Over the course of the late eleventh and twelfth centuries there was an expansion of trade and industry in the area, organised in and stimulated by the new boroughs, markets and fairs listed in table 4.¹⁹ The growth of Newcastle must have affected the area south of the Tyne too. Founded on a 'semi-derelict site' around 1080, Newcastle had become a 'substantial town' by the early twelfth century, thriving not only on local and regional trade but also on long-distance trade in wool, hides and cloth. By 1203, Newcastle was exporting £2,375 worth of goods, ranking eighth among English ports in terms of volume of exports.²⁰

Expansion continued during the thirteenth and into the early fourteenth centuries. Newcastle was allowed a merchant guild from around 1216, a new parish was created in 1220, houses were set up by the four orders of friars between 1261 and 1290, and a licence to collect tolls for murage was granted in 1265.²¹ Evidence from towns between the Tyne and Tees is thinner but Fraser has pointed out that merchants in these centres were able to expand the range of goods they offered

¹⁸ Ibid., pp. 100–1.

¹⁹ C. M. Newman, 'Economy and Society in North-Eastern Market Towns: Darlington and Northallerton in the Later Middle Ages', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), p. 134.

²⁰ C. M. Fraser and K. Emsley, *Tyneside* (Newton Abbot, 1973), pp. 18–20.

²¹ Ibid., pp. 20–21.

around the turn of the fourteenth century, indicating commercialisation.²² The North-east certainly benefited from the expansion of long-distance trade over the course of the thirteenth century. Miller and Hatcher estimated that the value of England's overseas trade might have trebled between 1203–4 and the opening years of the fourteenth century.²³ Growth was probably even more rapid in the North-east since Newcastle, which had ranked as the eighth wealthiest town in England in 1203, was the fourth wealthiest town as assessed for taxation in 1334; York is third in the list.²⁴

The basis of the thirteenth-century expansion in overseas trade was the export of wool to northern areas of continental Europe. The detailed customs data surviving from the end of the thirteenth century onwards show that England's wool exports nearly doubled between 1279–80 and 1304–5.²⁵ The development of the cloth manufacturing industry in the cities of Flanders over the twelfth and thirteenth centuries created a demand for the export of English wool, a trade handled initially by Flemish merchants and later by Italians.²⁶ Wool was very important to Newcastle as an export product during the middle ages. Wool exports recorded in the royal customs accounts increased from an average of 851 sacks annually during the 1280s to peaks of over 2,000 sacks in 1305 and 1329. What is more, from 1304 to 1343 Hartlepool was treated separately by customs officials and the annual export from the town of an average of 308 sacks of wool was recorded in the period 1304–13.²⁷ The international wool trade also had a knock-on effect on inland towns including Darlington.²⁸ Figure 3 demonstrates that Newcastle and Hartlepool enjoyed a particularly sharp rise in exports in the first decade of the fourteenth century, a boom which was quickly curtailed by the effects of conflict with Scotland discussed below.²⁹

There were other major exports from Newcastle. As many as 15,000 hides were exported each year during the 1280s, for example.³⁰ Towards the end of the thirteenth century coal became increasingly important. As early as 1269, the prior of Durham incurred the wrath of the burgesses of Newcastle by shipping coal from North Shields. Expansion in the late thirteenth century is suggested by the observation in 1281 by a Newcastle jury of the importance of coal in the increase in the value of the city. The order in 1320 for 1,000 chaldrons of coal to be sent to Scotland from Newcastle demonstrates the large amounts of

²² C. M. Fraser, 'The Pattern of Trade in the North-East of England, 1265–1350', *Northern History* 4 (1969), 50.

²³ E. Miller and J. Hatcher, *Medieval England: Towns, Commerce and Crafts, 1086–1348* (London, 1995), pp. 212–14.

²⁴ A. Dyer, 'Appendix: Ranking Lists of English Medieval Towns', in *The Cambridge Urban History of Britain, 1: 600–1540*, ed. D. M. Palliser (Cambridge, 2000), p. 755.

²⁵ Britnell, *Britain and Ireland*, pp. 126–7.

²⁶ C. M. Cipolla, *Before the Industrial Revolution: European Society and Economy 1000–1700* (London, 1993), pp. 188–93; Britnell, *Britain and Ireland*, p. 127.

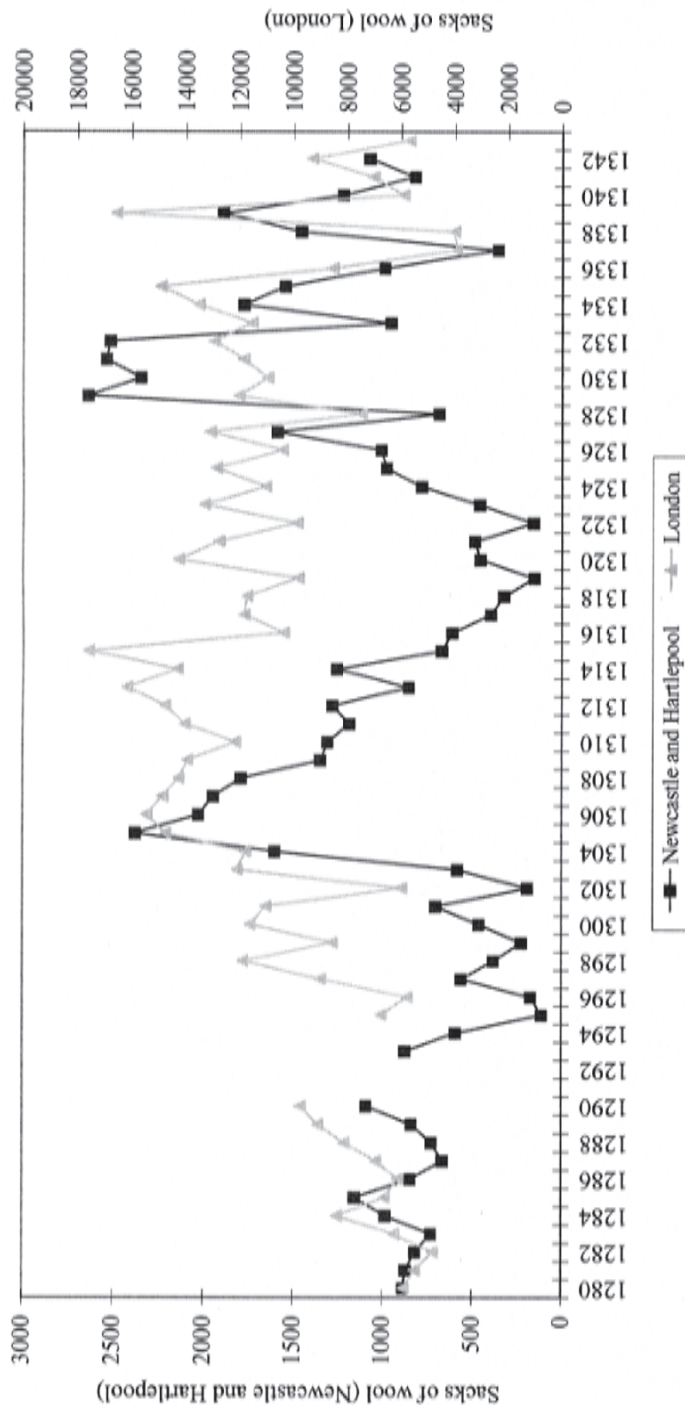
²⁷ Data prepared by Dr Margaret Bonney and drawn from E. M. Carus-Wilson and O. Coleman, *England's Export Trade, 1275–1547* (Oxford, 1963); T. H. Lloyd, *Alien Merchants in England in the High Middle Ages* (Brighton, 1982). Available from the European State Finance Database as filename \mmb\einm001.txt at <http://www.le.ac.uk/hi/bon/ESFDB/MMB/mmb.html> (viewed November 2006).

²⁸ Newman, 'Darlington and Northallerton', p. 135.

²⁹ See below p. 61.

³⁰ J. Kermode, 'Regional Surveys: (E) Northern Towns', in *The Cambridge Urban History of Britain, 1: 600–1540*, ed. D. M. Palliser (Cambridge, 2000), p. 670.

Figure 3. Export of wool from Newcastle, Hartlepool and London, 1280–1343



Source: data prepared by Dr Margaret Bonney and drawn from E. M. Carus-Wilson and O. Coleman, *England's Export Trade, 1275-1547* (Oxford, 1963) and T. H. Lloyd, *Alien Merchants in England in the High Middle Ages* (Brighton, 1982). Available from the European State Finance Database as filename 'numb/einn001.txt' at <http://www.le.ac.uk/hi/bom/ESFDB/MMB/numb.html> (viewed March 2006). Caution is needed in placing too much weight on annual changes in export levels, especially when comparing one place with another, due to slight variation in the period covered by the accounts: Carus-Wilson and Coleman, *England's Export Trade*.

coal which could be mobilised in the city during this period, especially when compared with export data from later periods.³¹

Commercialisation and industrialisation had a direct effect upon the rural economy of the region. Large monastic suppliers and small peasant producers alike benefited from rising wool prices.³² Even in the lowland areas of the Tyne Tees region, pasture land was relatively abundant, meaning tenants must have been able to use their flocks to supply the market. Likewise, production of hides for the market must also have provided income in many rural communities in the region. The impact of demand for coal is likely to have been less widespread and to have affected only a small number of townships, principally those close to Newcastle.

Urban growth must also have stimulated grain production. The priory parishes from which the tithe data derive were among the most fertile in the area, the most intensively cultivated, and the closest to the coastal ports; in other words, they were situated in the areas most responsive to commercialisation. As early as the 1180s, a charter to the burgesses of Sunderland explicitly mentions the borough's supply of grain from the surrounding area.³³ However, the proportion of people living in towns probably remained low: in England as a whole an estimated 15 per cent of the kingdom's inhabitants were urban dwellers around 1300.³⁴ It can be demonstrated that the increase in grain consumption in the Tyne Tees region suggested by figure 2 was sustained largely by the growth in the countryside itself rather than by the expanding urban sector.

Table 5 gives a very rough estimate of total grain production between the Tyne and Tees in 1293, from which certain deductions must be made to arrive at the amount of grain available for human consumption. Next year's seed corn probably accounted for approximately one quarter of total output.³⁵ Some proportion of corn produced must have been fed to animals, though this might have been on the low side in a region of relatively abundant pasture. It was estimated that one-third of oats and one-third of legumes output, after seed was deducted, was disposed of in this way.³⁶ After these deductions, between 120,994 and 151,242 quarters of grain would be available for human consumption. Assuming annual per capita consumption of 1.65 quarters, these estimates would suggest the Tyne

³¹ 610 chaldron monthly export average in the year 1377–8 and 85 chaldron average between 1454 and 1509: J. B. Blake, 'The Medieval Coal Trade of North East England: Some Fourteenth-Century Evidence', *Northern History* 2 (1967); J. F. Wade, 'The Overseas Trade of Newcastle upon Tyne in the Late Middle Ages', *Northern History* 30 (1994), 39.

³² Britnell, *Commercialisation*, p. 113. Price data in G. Clark, 'The Price History of English Agriculture, 1209–1914', available at <http://www.econ.ucdavis.edu/faculty/gclark/papers/Agprice.pdf> (viewed November 2006). For rising wool prices high wool prices in north-east England in the early fourteenth century by comparison with later periods, see the data extracted from the Durham Priory records in: E. Gemmill, 'Appendix: Prices from the Durham Obedientiary Account Rolls, 1278–1367', in *Rural Society and Agriculture in the Late Middle Ages*, ed. R. H. Britnell and B. Dodds (forthcoming).

³³ Britnell, *Britain and Ireland*, pp. 54–64; Boldon Buke, ed. Greenwell, p. xlii.

³⁴ Miller and Hatcher, *Towns, Commerce and Crafts*, p. 396.

³⁵ This is the approximate rate used by Dyer in his model of a peasant budget: C. Dyer, *Standards of Living in the Later Middle Ages: Social Change in England c. 1200–1520* (Cambridge, 1998), p. 112.

³⁶ B. M. S. Campbell, *English Seigniorial Agriculture, 1250–1450* (Cambridge, 2000), pp. 224, 228, 391–8. It was assumed that one-third of oats output and one-third of legumes output represented approximately 15 per cent of total output, based on average grain tithe output (see appendix).

Tees region's arable output could feed between approximately 73,000 and 92,000 people.³⁷ It is possible that this estimate is a little on the low side since, according to the estimated output indices in figure 2, the 1293 harvest was relatively poor, although not as bad as those of the two following years.

Table 5. Estimating the quantity of grain produced between the Tyne and Tees in 1293

1293 tithe income from monks' tabulation ^a	Estimated total grain production in priory parishes ^b	Estimated total for area between Tyne and Tees ^d
£622 6s. 8d.	31,216qu. (upper limit) ^c 24,973qu. (lower limit) ^c	237,242qu. (upper limit) ^c 189,794qu. (lower limit) ^c

a. 1293 data are used from the monks' tabulation of that year (table 1). Monkwearmouth is excluded from the list for reasons unknown so it is possible that this is a slight underestimate. However, it was clearly the monks' intention to give an estimate of total tithe income so it is likely that Monkwearmouth tithe receipts were included in another total.

b. This estimate is based on the deflation of the 1293 tithe income by the 1293 grain price for a composite quarter of grain. This result, an estimate of tithe output in grain, is then multiplied by ten to give estimated total grain output in the priory parishes.

c. Upper and lower limits have been provided for the output estimates because of the possible impact of discounts on the value of the tithe corn made in the process of sale. The upper limit assumes the actual value of the tithe corn has been discounted by 25 per cent. The lower limit assumes no discount. See chapter 2 and the appendix for discussion of this issue.

d. In the absence of information from non-priory parishes, this crude estimate is based on the multiplication of the Durham estimate by 7.6 which is the ratio of the number of parishes between Tyne and Tees included in the monks' tabulation (eight, including Monkwearmouth) to the total number of parishes in the area (sixty-one). This may produce an overestimate since arable production is likely to have been higher in the townships of the priory's appropriated parishes lying in the east of the region. However, this may be offset by the larger size of parishes further west.³⁸

A substantial urban population was available to Durham producers in the disposal of their grain. Durham itself is likely to have had between three and four thousand inhabitants, most of whose grain needs were presumably met from the Tyne Tees region.³⁹ Of the other urban centres which must have consumed grain from the Tyne Tees region, Newcastle was by far the largest and around 10,000 is a likely minimum for its peak population in c. 1300.⁴⁰ Hartlepool was probably

³⁷ B. M. S. Campbell et al., *A Medieval Capital and its Grain Supply: Agrarian Production and Distribution in the London Region c. 1300* (London, 1993), p. 35.

³⁸ The recorded value of the same parishes in Pope Nicholas IV's tax assessment was much lower than in the monks' own tabulation, casting doubt on the reliability of valuations used for taxation purposes. However, the possible under valuation probably applied to all parishes in the region, since the ratio of the value of these parishes to those of the whole region was approximately the same as that used here: *Taxatio Ecclesiastica Angliae et Walliae Auctoritate P. Nicholai IV Circa A.D. 1291*, ed. T. Astle, S. Ayscough, and J. Caley (London, 1802), pp. 314–16. For undervaluation in 1291 see: *The Valuation of Norwich*, ed. W. E. Lunt (Oxford, 1926), pp. 151, 579–80.

³⁹ There are no reliable population data from Durham and these figures are estimates. Russell's figure of 2,000 inhabitants for Durham in the late fourteenth century is based on comparison rather than any concrete data: S. B. Holt, 'A Note Concerning Russell's Estimate of the Population of Durham City in the Fourteenth Century', *Durham County Local History Society Bulletin* 22 (1978); M. Bonney, *Lordship and the Urban Community: Durham and its Overlords 1250–1540* (Cambridge, 1990), p. 35.

⁴⁰ Estimates of urban population sizes differ considerably. Britnell did not include Newcastle in his list of four English towns known to have had between 10,000 and 80,000 inhabitants in the early fourteenth century: R. H. Britnell, 'The Towns of England and Northern Italy in the Early Fourteenth Century',

the region's next largest centre after Durham itself and a comparison of wool export levels with those from Newcastle suggests it might have contained as many as 2,500 inhabitants in the first half of the fourteenth century.⁴¹ Darlington had around 1,200 inhabitants in the late sixteenth century which is perhaps not an unreasonable estimate for the town's size at the beginning of the fourteenth.⁴² Judging by the farms paid to the bishops for the profits of his boroughs, as listed in the Hatfield Survey of around 1380, the other boroughs listed in table 4 were considerably smaller than Darlington, perhaps containing around 500 inhabitants each.⁴³ This is probably something of an overestimate for very small boroughs such as Stockton and Sunderland but this helps make up for other settlements which, although not legally defined as boroughs, probably contained some urban features. These include Norton, Sedgefield and Staindrop, listed as having markets and fairs in table 4, and other centres such as Chester-le-Street, Lanchester, Ferryhill and Wolsingham. The combined population of Newcastle, Hartlepool, Durham, Darlington and the boroughs comes to an estimated 19,700 which should perhaps be inflated to 21,000 to make further allowance for semi-urban centres which were not boroughs. However, several centres were on or beyond the limits of the Tyne Tees region and therefore a proportion of their grain needs were met from elsewhere. If the population estimates of Newcastle, Gateshead, Darlington, Hartlepool, Barnard Castle, and Stockton, all of which are on the perimeter of the land between Tyne and Tees, are halved to allow for grain supply from beyond the region, then the total urban population available to Durham producers reaches 13,400.

These estimates suggest that the grain output of the Tyne Tees region at the end of the thirteenth century could have fed between 73,000 and 92,000 people and that the urban population to whom grain was sold numbered a little over 13,000. It must be emphasised that these figures are highly speculative. Not only is there very little information on the size of urban populations but nothing is known about factors such as the role of imported grain. Even such rough estimates reflect the considerable extent of commercial opportunity open to Durham producers but also demonstrate that, even when towns were at their maximum size, most of the demand for grain is likely to have come from the countryside. Moreover, although towns were growing, there had been some urban demand for grain long before 1300. All in all, the expansion of urban demand could not

Economic History Review 44 (1991), 22–3. However, Campbell et al. estimated that as many as sixteen towns had over 10,000 inhabitants in 1334 and, given its place in the ranking of English towns by wealth according to the 1334 subsidy, Newcastle should be included in this list: Campbell et al., *Medieval Capital*, p. 10; Dyer, 'Appendix: Ranking Lists of English Medieval Towns', p. 755. An estimate of around 10,000 as a population maximum for late medieval Newcastle is not incompatible with the 1377 Poll Tax return which records 2,647 tax payers in the city: Dyer, 'Appendix: Ranking Lists of English Medieval Towns', p. 758.

⁴¹ This is based on a comparison of the average number of sacks of wool exported from Newcastle and Hartlepool in the years for which customs were levied separately on the two ports (1304–42). Data prepared by Dr Margaret Bonney and drawn from Carus-Wilson and Coleman, *England's Export Trade*; Lloyd, *Alien Merchants in England in the High Middle Ages*. Available from the European State Finance Database as filename \mmb\einm001.txt at <http://www.le.ac.uk/hi/bon/ESFDB/MMB/mmb.html> (viewed November 2006).

⁴² Newman, 'Darlington and Northallerton', p. 129.

⁴³ *Bishop Hatfield's Survey*, ed. W. Greenwell (Surtees Society 32, 1856), pp. 6, 39, 89, 137, 167.

account for more than a small part of the increase in grain production levels up to the early fourteenth century.

There is no information on how demographic expansion in the Durham countryside was achieved. The number of adult males in the Somerset manor of Taunton increased from 612 in 1209 to 1,448 in 1311, representing a cumulative annual rate of increase of 0.85 per cent. Population growth rates substantially higher than this are achieved in parts of the world today but, nevertheless, in a pre-industrial economy and over a period of a century this represents an example of very sustained population increase.⁴⁴ However, Titow described Taunton as 'the most extreme case of an anciently settled manor' and suggested that growth rates were likely to have been inflated 'on the highly colonising manors with their greater opportunities for early marriage'.⁴⁵ The countryside between the Tyne and Tees certainly falls into this category. The abundance of resources in the region might have led to early marriage and high fertility rates. It might also have encouraged immigration. People moved from one manor to another not infrequently and, although most tenants tended to move to other villages in the same locality, some seem to have ventured further afield.⁴⁶ It is possible that the less densely populated parts of the kingdom were attractive to those from other regions without adequate holdings.⁴⁷ Occasionally Durham tithe buyers have names suggesting they hailed from outside the area, such as William of Ossington and John of Ely who bought tithes in Aycliffe parish in 1307 and 1308, but the sources do not survive for a wider-ranging study of immigration in the region.⁴⁸

Despite the evidence for demographic expansion in the countryside, the late thirteenth and early fourteenth centuries were not years of trouble-free grain production in the Tyne Tees region. The sharp fall in estimated arable output indices in the first half of the 1290s, for example, is the result of high grain prices which indicate poor harvests, like those observed elsewhere in England.⁴⁹ However, there is no sign that the limits of growth had been reached by 1311 since land was still available and grants of waste continued to be made: this was not a society on the brink of Malthusian crisis.⁵⁰ Nonetheless, crisis did follow, and on a spectacular and catastrophic scale.

⁴⁴ *Demographic Yearbook 2001*, ed. United Nations Statistics Division, 2001.

⁴⁵ J. Z. Titow, 'Some Evidence of the Thirteenth-Century Population Increase', *Economic History Review* 14 (1961), 220.

⁴⁶ C. Dyer, *Making a Living in the Middle Ages: the People of Britain 850–1520* (New Haven and London, 2002), p. 184.

⁴⁷ Z. Razi, *Life, Marriage, and Death in a Medieval Parish: Economy, Society, and Demography in Halesowen, 1270–1400* (Cambridge, 1980), pp. 30–1; J. Hatcher, *Rural Economy and Society in the Duchy of Cornwall, 1300–1500* (Cambridge, 1970), p. 220.

⁴⁸ DCM, bursar's sale of tithes 1307–8, 1308–9. For surname evidence of urban migration see P. McClure, 'Patterns of Migration in the Late Middle Ages: the Evidence of English Place-Name Surnames', *Economic History Review* 32 (1979); Bonney, *Durham*, p. 179. The lack of court roll material from the thirteenth century in the Tyne Tees region limits the amount of evidence available for a study of peasant names in the countryside.

⁴⁹ H. E. Hallam, 'The Climate of Eastern England 1250–1350', *Agricultural History Review* 32 (1984), 127.

⁵⁰ Dunsford and Harris, 'Colonization', 48.

War and weather

Grain output from the parishes between the Tyne and Tees collapsed during the second and third decades of the fourteenth century. Estimated grain production levels fell by nearly 70 per cent between 1311 and 1316 and had hardly shown any recovery by 1330, the next year for which an index can be calculated (figure 2). The obedientiary account series from the 1310s are patchy, and there are no surviving bursars' accounts at all dating from between 1319 and 1328. However, the estimated output data can be supplemented by data from tithes received as grain from Billingham township (table 6). 1315 and 1316 were years of very low tithe grain output in Billingham, with receipts 50 per cent below their 1304 levels, but production levels had fallen further in 1320 and 1323. Only in the later 1320s are there signs of recovery. In adjacent Wolviston, tithe output in 1320 was less than half 1304 levels.

Table 6. Tithe grain and demesne output, 1315–29

Billingham tithe

	100 = 1304 levels				
	wheat	barley	oats	legumes	total
1315	41	66	61	82	54
1316	53	0	189	152	47
1320	31	41	66	177	43
1323	22	19	178	104	36
1327	55	72	121	327	77
1328	52	79	109	291	77
1329	65	70	117	368	83

Wolviston tithe

	100 = 1304 levels				
	wheat	barley	oats	legumes	total
1320	22	84	32	292	44

Billingham demesne

	100 = 1304 levels				
	wheat	barley	oats	legumes	total
1315	46	66	124	41	67
1316	53	51	114	73	68
1319	73	120	120	35	89
1320	49	71	122	91	70
1323	32	40	43	0	34
1327	68	163	141	294	105
1328	64	146	110	229	91
1329	70	56	106	256	81

Pittington demesne

	100 = 1304 levels				
	wheat	barley	oats	legumes	total
1316	57	52	56	47	55
1319	104	6	50	247	62
1320	60	33	93	106	68

Source: DCM, manorial accounts.

Figure 2 suggests that at no other time in the entire period from 1270 to 1536 from which data are available, including the years of the Black Death and its aftermath, did output fall so steeply and so quickly as it did in the 1310s. The arable sector collapsed in the Tyne Tees region.⁵¹ Other areas of England were affected in this period by high levels of war taxation, and the bad harvests of 1315–22 were a Europe-wide phenomenon. North-east England, however, suffered the direct effects of war with the passage of soldiers on their way to Scotland and the incursions of enemy raiders.⁵² This section will examine the crises of the 1310s and 1320s more closely and seek to establish the causes of the collapse in arable production in the Tyne Tees region. The effects of war will be considered using chronicle evidence. Comparison will also be made with other regions of England and with the impact of war in another medieval rural economy. There will then be a consideration of the effect of bad harvests and the possible impact of famine mortality.

Sir Walter Scott's famous image of Durham Castle as a 'bastion against the Scot' is testimony to the fame of Border warfare but recent historians have been cautious in attributing much importance to the role of war as a cause of economic change. Briggs did find evidence of the damage caused by raiders in north-west England but questioned the picture of widespread devastation given by taxation records.⁵³ For the North-east, Lomas argued that the Tyne was an important barrier, to the south of which the devastation was limited.⁵⁴ This certainly seems to have been the case at the end of the thirteenth century, following Edward I's invasion of Scotland in 1296. Tithe receipts in Durham Priory's Northumberland parishes were badly affected but the Durham area remained free from raiders and any destruction caused by the passage of the English king's armies, or worries about the future spread of the conflict, did not offset the continued rise in grain production levels.⁵⁵

However, judging by the accounts of chroniclers, Scots visitors made frequent and devastating appearances south of the Tyne from the summer of 1312 when Robert Bruce invaded England and the city of Durham itself was attacked on market day. The monastic chronicler Robert Graystones referred to the 'burning and devastation of the great part of the bishopric'.⁵⁶ When the English had been defeated at Bannockburn two years later, the activities of raiders south of the Tyne intensified.⁵⁷ The men of Durham seem to have paid off the Scots in the summer of 1314, for the enormous sum of 800 marks, but any respite they gained

⁵¹ The chronicle of Robert Graystones in *Historiae Dunelmensis Scriptores Tres*, ed. J. Raine (Surtees Society 9, 1839), pp. 94–103.

⁵² W. M. Ormrod, 'The Crown and the English Economy, 1290–1348', in *Before the Black Death: Studies in the 'Crisis' of the Early Fourteenth Century*, ed. B. M. S. Campbell (Manchester, 1991), pp. 149–59.

⁵³ C. Briggs, 'Taxation, Warfare and the Early Fourteenth Century 'Crisis' in the North: Cumberland Lay Subsidies, 1332–1348', *Economic History Review* 58 (2005).

⁵⁴ R. A. Lomas, *North-East England in the Middle Ages* (Edinburgh, 1992), pp. 55, 72.

⁵⁵ R. A. Lomas, 'The Impact of Border Warfare: the Scots and South Tweedside c. 1290 – c. 1520', *Scottish Historical Review* 75 (1996), 148–52.

⁵⁶ C. McNamee, *The Wars of the Bruces: Scotland, England and Ireland 1306–1328* (East Linton, 1997), p. 56; *Scriptores Tres*, ed. Raine, p. 94.

⁵⁷ Lomas, 'Border Warfare', 148–9; McNamee, *Wars of the Bruces*, pp. 72–4.

was only temporary.⁵⁸ In June 1315 the Scots surprised Prior Burdon in his manor house at Bearpark and chased him to Durham. The raiders clearly wanted booty since the chronicler listed the priory's movables they carried off with them, including a large amount of livestock. The raiders then divided forces: one group headed for Chester-le-Street and the other 'devastated' Hartlepool and the whole eastern part of the bishopric.⁵⁹

Although the raiders seem to have bypassed the Durham area and devastated Yorkshire in 1316, the Scots returned in the early summer of 1318. It is not clear how seriously Durham was affected but records made for the collection of papal taxes indicate a fall in the value of some parishes in the area.⁶⁰ The period of truce which began in November 1319 ended abruptly with a devastating raid on the Durham area at the end of January 1322. McNamee and Scammell both speculated that there was some breakdown in the payment of tribute but, whether or not this was the case, Durham was clearly specifically targeted.⁶¹ Graystones tells us that the Scots devastated the area and pretended to cross the Tees and enter Richmondshire. They then returned unexpectedly and subjected the inhabitants of the bishopric to 'many terrible things' before going back to Scotland. The scale of the destruction was so great that there was famine and, by the summer of 1322, a quarter of wheat cost as much as 40s.⁶² Thereafter, Durham does not seem to have been affected by raiding again before the conclusion of a truce between England and Scotland in May 1323.

The appearance of raiders, and lurid accounts of the devastation they left behind, do not necessarily mean they caused widespread and lasting damage to the economy of the Tyne Tees region. The bishop, priory and 'community of the bishopric' repeatedly negotiated and renegotiated truces in an attempt to limit the damage caused by the Scots. Between 1311 and 1327 a series of such peace agreements was made between Durham and the Scots. That of 1313 even described Robert Bruce as 'King of Scotland', conceding the title Edward II was fighting for.⁶³ Scammell argued that the economy of the area between Tyne and Tees was much less seriously affected than that of surrounding counties because of the success of the men of the bishopric in negotiating tribute payments. Her conclusions were reinforced by Lomas. They cite some evidence to demonstrate this point. For example, the only priory church to need rebuilding during this period was that at Northallerton, in the diocese of York, which had been devastated by the Scots in 1318.⁶⁴ Priory rental income was actually 28 per cent higher in 1316–17 than in 1291–2. The rent levied on the lands of the vacant bishopric was only 3 per cent lower in 1316–17 than it had been in 1311.⁶⁵

Closer examination of the evidence, however, casts doubt over the optimistic conclusions of Scammell and Lomas regarding Durham's fate at the hands of

⁵⁸ *Scriptores Tres*, ed. Raine, appendix p. cxiii.

⁵⁹ *Ibid.*, p. 96; McNamee, *Wars of the Bruces*, pp. 79–80.

⁶⁰ McNamee, *Wars of the Bruces*, pp. 82–8.

⁶¹ *Ibid.*, p. 96; J. Scammell, 'Robert I and the North of England', *English Historical Review* 73 (1958), 392.

⁶² *Scriptores Tres*, ed. Raine, pp. 102–3.

⁶³ McNamee, *Wars of the Bruces*, p. 135; Scammell, 'Robert I and the North of England', 393.

⁶⁴ Scammell, 'Robert I and the North of England'; Lomas, *North-East England*, pp. 55–61.

⁶⁵ McNamee, *Wars of the Bruces*, p. 114.

Scots raiders. In the first place, rents are tricky indicators of the impact of the raids because it is difficult to know if figures are directly comparable from one year to the next and because of the problem of non-payment. As Lomas himself indicated, the increase in priory rental income is belied by the sharp increase in arrears over the same period.⁶⁶ Deflated cash receipts from sold tithes certainly indicate more severe difficulties by the mid-1310s than suggested by the evidence of rents (figure 2). However, no other aggregate output indices could be calculated for the rest of the 1310s or 1320s.⁶⁷ The tithe grain and demesne output data discussed above (table 6) are more promising. A comparison with similar data from Yorkshire, a region where much attention has been drawn to the impact of Scots raiders, supports the conclusion that the fate of the rural economy in the Tyne Tees region was bleaker than suggested by the rental evidence. The comparison also questions the effectiveness of negotiation by the men of the Durham bishopric in preventing disruption to agriculture and the economy.

Table 7. Skipton and Kildwick tithe output in the 1310s

Skipton tithe (West Yorks.)

	100 = 1304 levels		
	'hard corn'	oats	total
1315	70	57	58
1316	34	59	56
1317	96	45	50
1318	101	85	86

Kildwick tithe (West Yorks.)

	100 = 1304 levels		
	'hard corn'	oats	total
1315	110	66	68
1316	53	54	54
1317	111	62	64
1318	166	97	100

Sources: I. Kershaw, *Bolton Priory: the Economy of a Northern Monastery 1286–1325* (Oxford, 1973), pp. 64–70. Kershaw expressed doubts over the relationship between Bolton Priory's tithe corn receipts and yields in the parishes due to the sale of varying amounts of tithe for cash. He considered that the data bore no relationship to actual tithe yield after 1320: Kershaw, *Bolton Priory*, pp. 64–7.

Billingham and Wolviston, townships in southeast Durham, performed worse than Skipton and Kildwick in West Yorkshire in 1315 and 1316, years of poor harvests everywhere but preceding the advent of the Scots in Yorkshire (tables 6 and 7). The Scots raid into Yorkshire in the spring of 1318 might have affected the tithe grain from the 1317 harvest, contributing to the low receipts recorded in table 7 for this year. However, the harvest of 1318 itself does not seem to have been badly affected. In this year the Skipton and Kildwick tithes yielded 86 and 100 per cent of 1304 levels, although other parishes in the area were probably

⁶⁶ R. A. Lomas, 'Durham Cathedral Priory as a Landowner and a Landlord, 1290–1540' (unpublished Ph.D. thesis, University of Durham, 1973), pp. 100, 104.

⁶⁷ Several receipts from tithes sold for cash survive in the bursar's accounts of 1318–19, 1328–9 and 1329–30 but they are too few to permit the calculation of estimated grain output indices.

worse affected.⁶⁸ Overall, in the four years from which data are given in table 7, tithe output from Skipton and Kildwick did not fall below 50 per cent of 1304 levels, despite the presence of the raiders in 1318. In Billingham, tithe output fell below this level in 1316, 1320 and 1323. The comparison between the Yorkshire and Durham parishes is not a precise one because data do not survive from the same years. However, the idea that the Durham region somehow escaped lightly by comparison with other parts of northern England is not borne out by the evidence. The raids of 1315, 1318 and 1322 described above are all likely to have contributed to the exceptionally low tithe receipts in table 6.

Warfare sometimes destroyed rural economies in the late middle ages, as happened in Normandy during the English invasion and occupation between c. 1410 and c. 1450. The plunge in grain tithe receipts in Normandy during this period was caused partly by continued demographic decline but Bois laid great emphasis on the effect of war. Trade was disrupted as bandits flourished, the English occupiers first pillaged and later taxed communities, capital resources such as mills were destroyed and villages were abandoned by a terrified population.⁶⁹ The comparison should not be taken too far: Durham was not occupied by the Scots in the early fourteenth century. Even so, some of the same factors probably affected the rural economy of the Tyne Tees region.

The Scots raiders in Durham in the early fourteenth century stole livestock and burned grain supplies and buildings, such as the manorial complex at Ketton and the camera, hall and chapel at Wardley. A later petition to the pope by the Durham monks for the appropriation of the church at Hemingbrough, although admittedly not the most impartial source, presents the damage wreaked by the Scots as permanent.⁷⁰ Although there are no records of the destruction of tenant property, which must have been less elaborate and costly than manorial buildings, the impact on non-seigneurial holdings might have been even more devastating. Poorer tenants would not necessarily have had the resources at their disposal to replace agricultural tools and buildings. The theft of grain supplies must have left communities with insufficient seed corn. Human resources must also have been depleted as villagers fled to escape the raiders.

It has been pointed out that the raiders' aim was probably to instil as much fear as possible in the villagers, with the purpose of extracting tribute: complete destruction of livelihoods would have been counter-productive.⁷¹ Nevertheless, the payment of the tribute itself is likely to have seriously affected cultivators' capacity to produce grain. Bois emphasised the impact of the crushing English fiscal demands on the communities of occupied Normandy in the early fifteenth century, which prevented economic recovery after the initial devastation caused by the invasion.⁷² Likewise, from the 1290s heavy taxation and purvey-

⁶⁸ I. Kershaw, *Bolton Priory: the Economy of a Northern Monastery 1286–1325* (Oxford, 1973), pp. 66–70.

⁶⁹ G. Bois, *The Crisis of Feudalism: Economy and Society in Eastern Normandy c. 1300–1550* (Cambridge, 1984), pp. 316–45.

⁷⁰ *Northern Petitions Illustrative of Life in Berwick, Cumbria and Durham in the Fourteenth Century*, ed. C. M. Fraser (Surtees Society 194, 1981), p. 180; Scammell, 'Robert I and the North of England', 388–9; *Scriptores Tres*, ed. Raine, pp. 46–7, 102, appendix cxxii.

⁷¹ Scammell, 'Robert I and the North of England'; Lomas, *North-East England*, p. 55.

⁷² Bois, *Crisis of Feudalism*, p. 334.

ance demands were placed on communities elsewhere in England and Maddicott and others have described the dismal effect these could have on peasants. In some cases, villagers were reduced to the sale of their seed corn to pay taxes.⁷³ The Tyne Tees region constituted part of the special liberty of the bishops of Durham, known as the Palatinate, and therefore its inhabitants were not subject to royal taxation.⁷⁴ However, this did not mean they paid no taxes since levies were made by the Palatinate administration. For example, the money needed to pay off the Scots had to be raised within the Palatinate and the sudden scale and urgency of the demands meant heavy payments sometimes had to be made at a moment's notice. Circumstances were particularly desperate after the devastating 1315 raid. There does not seem to have been sufficient time to raise the money through ordinary methods, whatever they were, and there was a house-to-house collection.⁷⁵

Like in other parts of England, the poorer members of society between the Tyne and Tees were particularly vulnerable to the tax collectors because they did not have the connections or resources to avoid payment.⁷⁶ The shifting of the burden from the wealthy to the poor is difficult to document but the murder in 1318 of Sir Richard Marmaduke, who had taken charge of the collection of tribute payments, might have been associated with corruption and profiteering.⁷⁷ All in all, it is likely that the burden of tribute payment represented a 'heavy load' for villagers between the Tyne and Tees. This is confirmed by Scammell's estimate that protection money represented as much as a third of the annual value of lands, payment being distributed, of course, among the tenants.⁷⁸

The destruction of property and the payment of tribute were not the only aspects of warfare which affected the inhabitants of the Tyne Tees region in the 1310s and 1320s. Military recruitment was a further factor. Infantry in the early fourteenth century were not professional soldiers but rather men selected from the localities by commissions of array. Again, bribery exonerated the wealthy and the influential meaning the poor were the most seriously affected. Although the liberty of the Palatinate meant the king had no right to recruit soldiers in the Tyne Tees region, the idea emerged in the thirteenth and early fourteenth centuries that the bishop held his liberty in return for his role in protecting the border. As a result, the Palatinate administration required the men of Durham to serve. In particularly desperate circumstances, such as after the 1315 raid, the king took more direct control of recruitment in the Palatinate and detachments of the royal army were sent with orders to levy soldiers within the bishop's jurisdiction.⁷⁹

Historians have questioned the economic impact of military service for the

⁷³ Maddicott, 'English Peasantry', p. 348; M. Mate, 'The Agrarian Economy of South-East England before the Black Death: Depressed or Buoyant?' in *Before the Black Death: Studies in the 'Crisis' of the Early Fourteenth Century*, ed. B. M. S. Campbell (Manchester, 1991), p. 92; M. C. Prestwich, *Plantagenet England, 1225–1360* (Oxford, 2005), pp. 464–6.

⁷⁴ G. T. Lapsley, *The County Palatine of Durham: a Study in Constitutional History* (New York, 1900), p. 116.

⁷⁵ *Ibid.*, p. 122.

⁷⁶ Maddicott, 'English Peasantry', pp. 298–303.

⁷⁷ Lomas, *North-East England*, p. 56; H. S. Offler, 'Murder on Framwellgate Bridge', *Archaeologia Aeliana* 16 (1988), 198–9.

⁷⁸ Scammell, 'Robert I and the North of England', 397.

⁷⁹ Lapsley, *Palatine of Durham*, pp. 305–6.

king's wars in areas further to the south on the grounds that most workers on the land were not recruited. In a particularly large-scale campaign, such as that of 1298, it has been estimated that 5 per cent of England's adult male population were called to arms.⁸⁰ Even those who did serve tended to be back from campaign for the busy periods of the agricultural year. Likewise, areas in which holdings were very small and pressure for land very high could benefit from the absence of additional mouths to feed and low marginal labour output meant hands could be spared with little serious impact on production.⁸¹ However, not all these arguments apply to the Tyne Tees region. It is likely that recruitment was much heavier there than further south because of the imminence of the danger. Moreover, the continued availability of new land for cultivation suggests Durham villages were not bursting with surplus labourers. Recruitment from villages between the Tyne and Tees had begun long before the difficulties of the 1310s, as the payment of a fine for refusal to serve by men in Pitlington in 1296 indicates.⁸² However, heavy English military commitment in the 1310s means it is likely that recruitment was a significant factor in causing economic dislocation during this decade.

Although the Scots raiders of the 1310s and 1320s tended to avoid cities and concentrate their depredations on undefended areas, towns without adequate defences were badly affected. The attack on Durham in 1312 might have had serious consequences for the city's infrastructure. Hartlepool was targeted by the raiders more than once. Even without these direct attacks, however, the implications of the conflict for the urban centres of north-east England were great: commerce with their hinterlands was disrupted and the war at sea threatened overseas trade.⁸³ The slump in wool exports from Hartlepool and Newcastle in the 1310s and 1320s is illustrated in figure 3. The relative stability of exports from London suggests both wool production and the commercial institutions required for its export were particularly severely affected in the North-east during these years. It has been argued above that the towns were of relatively minor significance in terms of aggregate levels of grain consumption but the disruption in urban demand must nevertheless have had an effect.

All in all, it is clear that the impact of war on the rural economy of the Tyne Tees region should not be underestimated. However, extreme climatic conditions, which caused famine elsewhere in England and Europe, also contributed to the collapse of grain production in the 1310s. Using the available evidence, it is often impossible to disentangle the effects of war and bad weather on grain production but the latter appears to have been a severe and independent factor in causing the crisis. For example, Durham's monastic chronicler described the devastating floods which destroyed crops, mills and houses in 1315 after the raiders' visit. Famine, livestock epidemic, and heavy human mortality ensued.⁸⁴

⁸⁰ M. C. Prestwich, *War, Politics and Finance under Edward I* (London, 1972), p. 286; Prestwich, *Plantagenet England*, p. 465; Maddicott, 'English Peasantry', pp. 320–4.

⁸¹ Prestwich, *War, Politics and Finance*, p. 286; Maddicott, 'English Peasantry', p. 328.

⁸² *Halmota Prioratus Dunelmensis: 1*, ed. W. H. D. Longstaffe and J. Booth (Surtees Society 82, 1889), p. 1.

⁸³ McNamee, *Wars of the Bruces*, pp. 56, 70 n. 106, 85, 206–33.

⁸⁴ *Scriptores Tres*, ed. Raine, p. 97. One historian has questioned the applicability of Graystones' account to the Durham area because of his mention of deaths in London: Lomas, 'Border Warfare', 154. This

Evidence from elsewhere in eastern England suggests harvests were 'abysmally poor' in 1315–17 and 'poor' and 'very poor' in 1319 and 1321.⁸⁵ Data do not survive from all these years from the Tyne Tees region but it appears that this area was affected too. The harvest of 1316 was certainly very poor, a year in which the Scots bypassed Durham on their way to Yorkshire, but when evidence from other places suggests crops were destroyed by heavy rain. In Durham, like elsewhere, oats were affected less seriously than other crops because they are more resilient to wet conditions (table 6).⁸⁶ Bad weather returned to southern England in 1321 with a drought which destroyed the harvest but the complete absence of Durham data means the impact of this in north-east England cannot be confirmed.⁸⁷

The effects of bad weather did not only last one year. According to Graystones at least, the bad weather of 1315 had a longer-term effect since rivers swept away mills, mill ponds and houses.⁸⁸ The death of livestock in the famines of the 1310s and the murrains of the 1320s must have deprived arable cultivators of manure and plough beasts. Such expensive resources were not easy to replace.⁸⁹ The bad harvests are likely to have depleted the area's human resources too. Kershaw found examples of vacancies after the crisis of 1315–16 in many parts of England and detailed evidence from southern England suggests the famines took a toll in lives of as many as 10–20 per cent in some communities. Graystones' account of the famine of 1315 mentions the deaths of 'so many thousands of men' and, although detailed statistical evidence is entirely lacking from the area between the Tyne and Tees, receipts from tallages levied on bishopric estates fell by nearly 65 per cent between 1311 and 1316.⁹⁰

The demographic impact of poor harvests in the Tyne Tees region must have depended on a number of factors. It has been suggested that the North-east of England was particularly badly affected by grain shortage because of high levels of consumption of cheap grains even in normal years. This would mean it was not possible to switch to cheaper grains during periods of scarcity. However, grain output in the Durham Priory parishes was not dominated by oats in the way it was in less fertile upland regions and, in these areas at least, it might have been possible to consume cheaper grains in periods of dearth. It is noticeable in table 6 that tithe output of oats and legumes did not decline so much during the years of poor wheat and barley output.⁹¹

comment does not seem justified, however, given that Graystones' account is a description of the difficulties faced by Prior Burdon of Durham and this suggests he was referring to north-east England.

⁸⁵ Hallam, 'Climate', 128.

⁸⁶ I. Kershaw, 'The Great Famine and Agrarian Crisis in England, 1315–1322', *Past and Present* 59 (1973).

⁸⁷ *Ibid.*, 15.

⁸⁸ *Scriptores Tres*, ed. Raine, p. 97.

⁸⁹ There is court roll evidence for this from Halesowen. See Razi, *Halesowen*, p. 37; Kershaw, 'Famine', 37, 45; Miller and Hatcher, *Towns, Commerce and Crafts*, p. 418.

⁹⁰ Kershaw, 'Famine', 36–46; Smith, 'Demographic Developments', pp. 38–40; *Scriptores Tres*, ed. Raine, p. 97; Scammell, 'Robert I and the North of England', 389.

⁹¹ C. Dyer, 'Did the Peasants Really Starve in Medieval England?' in *Food and Eating in Medieval Europe*, ed. M. Carlin and J. T. Rosenthal (London and Rio Grande, 1998), pp. 53–4. For the severity of sixteenth-century famines in the north see A. B. Appleby, 'Disease or Famine? Mortality in Cumberland and Westmorland, 1580–1640', *Economic History Review* 26 (1973), 430.

Dyer has suggested that peasant indebtedness caused by commercialisation made them vulnerable to starvation in early-fourteenth-century England. Nothing is known about peasant debt in the Tyne Tees region in this period, and it is possible that rapid urban and commercial growth had made borrowing easier, increasing levels of debt.⁹² In fact, however, it is likely that fewer people actually died of starvation during years of poor harvests in the Tyne Tees region than in areas further south because of the low level of pressure on resources. Holdings were not precariously small and, even when harvests were very poor, land not used for arable crops could provide limited food resources. Another factor which might have alleviated the impact of the shortages is the importation of grain to Newcastle. In the sixteenth century at least, this had the effect of considerably reducing famine-related mortality in the region. Although detailed evidence does not survive from medieval Newcastle, grain was imported to Exeter during crisis years.⁹³

Despite these questions over the impact of bad harvests in the North-east, it would be wrong to dismiss Graystones' description of high mortality and extensive disruption too readily. The concentration of years of poor output around Durham in the 1310s and 1320s was exceptional. Although table 6 suggests oats and legumes offered alternative foodstuffs to the inhabitants of Billingham parish, the percentages given mask the fact that these fodder crops represented less than half of total output in all the years from which data survive. Thus, whilst communities could probably ride out one or two bad years by switching to fodder crops and other foodstuffs, this did not represent a practical solution year after year. Moreover, very bad harvests could leave the poorer peasantry without the means to pay rents and without seed corn for the following year. This might be the reason for the sharper falls in tithe than demesne output in table 6: demesne managers had greater capital resources to maintain supplies of seed corn even during periods of shortage.⁹⁴ Even if peasant farmers survived, departure might have been the only option left open to them.

The tithe evidence, in conjunction with the other narrative and quantitative sources available, leaves little doubt of the seriousness of the effects of war and weather on grain production between the Tyne and Tees in the 1310s and 1320s. Cultivation was disrupted by the destruction of tools, buildings and grain supplies along with the shortage of labour. Demand was also curtailed with the demographic impact of war and shortage. Although there is little evidence on non-arable sectors of the economy, the wool export data suggest pastoral farming was also badly affected. A rapidly growing rural economy was suddenly strangled by the influence of powerful outside factors. There is no sense that conditions in the region in the first decade of the fourteenth century predisposed the rural economy to disaster: this was not the overpopulated countryside of other parts of England. Yet figure 2 clearly shows that grain output levels never fully recovered

⁹² Dyer, 'Did the Peasants Really Starve in Medieval England?' p. 64.

⁹³ Appleby, 'Disease or Famine?' 420; M. Kowaleski, 'The Grain Trade in Fourteenth-Century Exeter', in *The Salt of Common Life: Individuality and Choice in the Medieval Town, Countryside, and Church: Essays Presented to J. Ambrose Raftis*, ed. E. B. DeWindt (Kalamazoo, 1995), pp. 3–4.

⁹⁴ The impact of shortage on peasant and demesne output is discussed in chapter 6, pp. 153–4 below.

from the crises of the 1310s and 1320s. The muted recovery is considered in the final section of this chapter.

Before the Black Death

The failure of arable production levels to recover completely is reflected in the estimated arable output indices (figure 2). In the eight harvests before the Black Death, arable output was nearly one-third below 1291–5 levels and barely half its peak in 1311. Nevertheless, output had risen well above its nadir of 1316. The final section of this chapter begins with a discussion of the problematic tithe evidence which charts the slow progress of recovery. There follows an examination of the factors which prevented fuller recovery including the ongoing threat of war. Finally, evidence from non-arable sectors of the economy is examined, showing that certain groups were able to prosper despite the difficult economic conditions.

Examination of the recovery before the Black Death is hampered by lack of evidence. Receipts from tithes sold for cash in the Durham Priory archive for the 1320s and 1330s are patchy and do not provide reliable indications of changing grain production levels. By the time the series of bursars' accounts resumes in 1328, the priory was facing very serious financial difficulties. This was largely the result of the loss of revenue from rents and tithes north of the Tyne and Tweed (see table 1) but maladministration might have aggravated the problems.⁹⁵ The bursars were forced to resort to heavy borrowing. In 1332–3, for example, the very substantial sum of £354 16s. 0d. was borrowed and £492 1s. 4½d. spent on paying existing loans.⁹⁶ In fact, the monks fell into the clutches of a group of wealthy merchants who advanced them credit in their desperation. One such merchant was Thomas del Holme, a burgess of Beverley, to whom the bursar and cellarer owed as much as £314 10s. 0d. in 1330.⁹⁷ One means of paying back the merchant creditors was through the sale of anticipated tithe receipts, that is the sale of tithes due in subsequent years. Between May 1337 and May 1338, for example, Holme paid £75 'before hand' for tithes.⁹⁸ The relationship between the priory and these tithe buyers suggests the tithes are likely to have been sold at discounted rates, reducing the usefulness of tithe data as indicators of changing production levels.⁹⁹ Fortunately for the monks, and for the estimated output indicators, by the 1340s the hold of the priory's creditors over tithe purchases seems to have eased and there was a return to the system of annual sales. Whereas during the 1330s as many as twenty 'before hand' entries were made in a single year, the average number of such entries in the accounts between 1340–1 and 1348–9 was only four.¹⁰⁰ The upshot of the priory's early-fourteenth-century cash flow problems is that the very sharply fluctuating deflated tithe receipts of

⁹⁵ Scammell, 'Robert I and the North of England'; I am grateful to Mr Alan Piper for indicating the possibility of maladministration during this period.

⁹⁶ DCM, bursar's account 1332–3, unlabelled loans section, *Soluciones debitorum*.

⁹⁷ DCM, debts of bursar and cellarer 8 Sept. 1330.

⁹⁸ DCM, bursar's account 1337–8, tithe receipts.

⁹⁹ Fraser, 'Pattern of Trade', 50–1.

¹⁰⁰ E.g. DCM, bursar's account 1333–4, tithe receipts.

the 1330s cannot be relied upon as indicators of arable production. Those of the 1340s seem to be more comparable with the rest of the series.

Table 8. Total tithe output from four townships, 1304–43 (quarters)

	Billingham	Wolviston	Newton Bewley	Westoe
1304	135.3	123.4		
1315	72.5			
1316	63.4			
1317				
1318				
1320	58.8	53.8	38.5	
1321				
1322				22.3
1323	48.5			36.4
1324				43.5
1325		56.1		
1326				
1327	104.7			
1328	103.6			
1329	112.4			
1330	44.0			
1331				13.4
1332			40.4	
1333	121.6			
1334	124.2			
1335				
1336	120.6		61.8	48.3
1337	130.0		62.0	49.8
1338				
1339	124.0	114.2	65.5	40.3
1340				37.6
1341				
1342				
1343	115.3	73.7	49.4	50.1

Just like for the 1310s and early 1320s, the problematic and absent cash receipts from sold tithes from the 1330s can be supplemented by garb tithe data from the manorial accounts. Table 8 shows tithe grain output from Billingham and Wolviston, both in Billingham parish, which indicate that, on this fertile land in the south-east of the region, output was approaching 1304 levels by the mid to late 1330s. There are no other townships from which comparable tithe grain output data survive from before and after the crisis of the 1310s and 1320s. However, table 8 shows that in Newton Bewley, also in Billingham parish, and Westoe in Jarrow parish tithe output was generally high from the late 1330s by comparison with levels in the early 1320s.

It is difficult to pin down the precise timing of this partial recovery because of the shortage of data. Tithe receipts from Billingham and Westoe show rising output in the mid to late 1320s but any such upward trend in grain production was not smooth. The Billingham tithe output data suggest that 1330 was a bad year and there is a low receipt from Westoe in 1331. The suggestion that harvests were poor in these years is confirmed by grain prices. They show a small peak in 1331–2, when prices were still low by comparison with the desperate years of the mid-1310s and early 1320s but comparable, for example, with the high prices of the 1290s.¹⁰¹ Overall, the garb tithe data suggest that the recovery evident in the 1340s had begun in the 1320s and suffered temporary setbacks in the early 1330s.

Elsewhere in England, trends in arable production between the poor harvests of the 1310s and the Black Death were varied. The sown acreage on some manorial demesnes was curtailed and parcels of land leased out. They were not always taken up by cultivators, however, and land lay vacant in some areas.¹⁰² Likewise, some village populations continued to fall after the mortality caused by the famine. One factor which contributed to the difficulties experienced by producers was heavy wartime taxation, aggravated by an increasing shortage of currency.¹⁰³ However, the pre-Black Death difficulties were not universal. Some villages saw demographic recovery and very small holdings persisted on some manors, demonstrating the continued demand for land.¹⁰⁴

Military activity against the Scots was resumed in the 1330s but it was not until the end of that decade that the threat of raiding was renewed.¹⁰⁵ The Durham area was therefore temporarily freed from the impact of the raiders, affording a chance for economic recovery. This was probably hampered, however, by the longer lasting effects around Durham of the Scots raids, including the destruction of resources, such as buildings, mills, tools and so on. The difficulties communities had in replacing these are suggested by the problems which the clergy raised in a petition of 1330 to the king on the payment of a royal and papal tenth. Likewise, the *Nonarum Inquisitiones* show that land was still vacant in North Yorkshire and Lancashire in 1341 as a result of the Scots raids. However, as demonstrated by Briggs' work on the North-West, it would be unwise to place too much trust in descriptions of devastation when the authors hope to exonerate themselves from the payment of taxation.¹⁰⁶

The legacy of the physical destruction caused by the raiders, patchy as it must have been, was probably less important than the fear of the resumption of raiding. The worst phase of Scots raiding was over in 1322 and, to some extent, the truce

¹⁰¹ D. L. Farmer, 'Prices and Wages [up to 1350]', in *The Agrarian History of England and Wales, 2: 1042–1350*, ed. H. E. Hallam (Cambridge, 1988).

¹⁰² A. R. H. Baker, 'Evidence in the "Nonarum Inquisitiones" of Contracting Arable Lands in England During the Early Fourteenth Century', *Economic History Review* 19 (1966).

¹⁰³ Ormrod, 'The Crown and the English Economy'; Maddicott, 'English Peasantry', pp. 353–6; Miller and Hatcher, *Towns, Commerce and Crafts*, pp. 424–5; J. L. Bolton, 'Inflation, Economics and Politics in Thirteenth-Century England', in *Thirteenth Century England* 4, ed. P. R. Coss and S. D. Lloyd (Woodbridge, 1992).

¹⁰⁴ Razi, *Halesowen*, p. 30.

¹⁰⁵ M. C. Prestwich, *The Three Edwards: War and State in England, 1272–1377* (London, 1980), pp. 60–1.

¹⁰⁶ *Northern Petitions*, ed. Fraser, p. 141; Baker, 'Nonarum Inquisitiones'; Briggs, 'Taxation'.

of 1323 and the Treaty of Northampton in 1328 made this clear at the time, as did the civil war in Scotland which followed the death of Robert Bruce in 1329. However, none of these events resolved the issue of feudal suzerainty which was at stake. In the 1330s Edward III took four armies to Scotland which cannot have encouraged confidence in the security of north-east England. Likewise, the opening of hostilities with the French in 1337 raised the likelihood of severe military disruption. Further conflict with the Scots, exacerbated by the involvement of the French, had long been a possibility. The Treaty of Corbeil of 1327 sealed the 'auld alliance' between France and Scotland, stating that the Scots would provide assistance to the French if war broke out between France and England. Edward III had received the homage of Edward Balliol, pretender to the Scottish throne, and the French supported his rival, the exiled David Bruce.

The threats materialised in the 1340s. David Bruce, the eighteen-year-old king of Scots, returned to Scotland in June 1341 and launched a raid which destroyed Penrith in the same year. The raiding continued and the imminence of a larger-scale invasion must have been well-known because of Bruce's debt to Philip VI of France and willingness to help attack the English. The Scots invasion of England came, at French behest, in 1346. Durham Priory accountants in 1346–7 accepted partial payment by those who had bought tithes because of the effects of the Scots on production.¹⁰⁷ Only following the Battle of Neville's Cross, and the capture of the Scottish king, did the threat of further raiding finally recede. At no point between 1322 and 1346 can people in north-east England have had any certainty of long-term military security.

It is not known how informed the inhabitants of the Durham villages were on the progress of the war with Scotland but evidence from elsewhere in England shows a sharp awareness of political events in some villages at certain times.¹⁰⁸ Maddicott thought the levying of troops in villages during this period and the return of men from campaign must have raised awareness of events of national importance. This channel of information must have made it clear to Durham producers after 1328 that military activity was still very much underway.¹⁰⁹ News of this kind is likely to have made tenants reluctant to renew the expansion of cultivation and kept worries about possible Scots invasion alive. Fear of the Scots might also have had a depopulating effect on Durham's communities. McNamee found examples of this in Barnard Castle as well as in Northumberland and areas west of the Pennines.¹¹⁰

Even after the end of the tribute payments, the resources of rural producers continued to be tapped. Demands were made of the bishop to provide men and resources for the king's campaigns in the north in 1333 and 1335. When the exiled David Bruce returned in 1341, the bishop was ordered to make ready all available men for the defence of Edward Balliol.¹¹¹ What is more, the effect of the passage of supposedly friendly troops on the arable economy was not always

¹⁰⁷ DCM, hostiller's account 1346–7.

¹⁰⁸ Prestwich, *Plantagenet England*, pp. 466–7.

¹⁰⁹ Maddicott, 'English Peasantry', p. 329.

¹¹⁰ McNamee, *Wars of the Bruces*, pp. 82, 110–14.

¹¹¹ Lapsley, *Palatine of Durham*, pp. 305–6.

easy to distinguish from that of enemy raids.¹¹² The possible economic impact of the English between Tyne and Tees is suggested by a reference to the destruction of peas and beans on the Pittington demesne 'by the king's ministers' in 1327.¹¹³

A further explanatory factor for the incompleteness of recovery in the Tyne Tees region must be the lack of population pressure before the onset of crisis. In some other areas, land hunger created a reserve of potential tenants meaning land was quickly reoccupied after the difficulties of the 1310s and early 1320s. No such reserve had existed around Durham and, as a result, land occupation is likely to have recovered less rapidly following the depopulation. This is indicated by allowances made in Durham Priory obedientiary accounts in the mid-1340s for 'waste moors' suggesting moorland once cultivated no longer produced an income.¹¹⁴

Figure 3 shows that wool exports from Newcastle and Hartlepool revived in the late 1320s and early 1330s. A cloth industry already existed in Newcastle in the opening years of the fourteenth century and it is possible that the region enjoyed some of the benefits of the expansion of the cloth export industry after 1325.¹¹⁵ Although wool exports had suffered severely in the 1310s and 1320s, their recovery during the 1330s was much more complete than that of arable production (figures 2 and 3). Clearly wool export levels are an inadequate indicator of pastoral production levels but the evidence does at least suggest a growth of the pastoral sector relative to the arable. This suggests both the impact of commercial incentives and the greater possibility of protecting movable assets in times of war. In 1316–17, for example, the manager of Ketton manor had been able to keep oxen and horses on hired pasture land 'for three nights in flight from the Scots'. However, the cellarer's loss of beasts seized both by the king's ministers and raiders in 1311–12 indicates that it was not always easy to protect livestock.¹¹⁶

A possible shift from arable to livestock-farming is also suggested by receipts from Ravensflat, land connected to Pittington manor, the tithes from which were collected with those of Pittington parish. Before the raids and bad weather, Ravensflat was used for arable cultivation: in 1309–10, for example, the tithes of cereals and legumes were collected directly. The crises of the 1310s seem to have affected the township badly, however, and in 1318–19 it was recorded as waste. Nevertheless, the land did not cease to be used because in 1324–5, the manager of Pittington demesne charged William Butcher of Durham for pasturing his beasts there. Cereal cultivation was later resumed and, by 1333–4, cash was received for

¹¹² McNamee, *Wars of the Bruces*, p. 241. For examples of the demands of 'enforced hospitality' further south see Maddicott, 'English Peasantry', p. 343.

¹¹³ 'per regales': DCM, Pittington manor account 1327–8. For further examples see Fraser, 'Pattern of Trade', 63.

¹¹⁴ *The Priory of Finchale: the Charters of Endowment, Inventories and Account Rolls*, ed. J. Raine (Surtees Society 6, 1837), pp. xxiv, xxviii.

¹¹⁵ Fraser, 'Pattern of Trade', 57; J. Munro, 'The "Industrial Crisis" Of the English Textile Towns, c. 1290 – c. 1330', in *Thirteenth Century England* 7, ed. M. C. Prestwich, R. H. Britnell, and R. Frame (Woodbridge, 1999), p. 140.

¹¹⁶ Scammell, 'Robert I and the North of England', 391. 'per tres noctes ad fugam Scotorum': DCM, Ketton manor account 1316–17. Gemmill, 'Prices Appendix'.

the sale of the garb tithes.¹¹⁷ This kind of temporary shift in land use, especially in places like Ravensflat on the edges of the ancient townships, is likely to be typical of the wider impact of the crises of the 1310s and 1320s in the Tyne Tees region.

Some urban groups seem to have flourished in the 1320s and 1330s. Profits seem to have remained high for certain merchants, a fact reflected by their capacity to lend substantial amounts of money to the monks. Although the mainstay of the export trade from north-east England in the early fourteenth century was wool, the large sums expended by the merchants on tithes meant they must have been involved in the grain trade also. Hybel has used bans on the export of grain from England, and exemptions made to those bans, to demonstrate that during the 1330s and 1340s grain was exported largely to the Netherlands and Norway but also to other destinations.¹¹⁸ Merchants in north-east England undoubtedly had a share in this trade. One example is the Hartlepool merchant John de Nesbit who spent over £43 on tithes from Heighington parish in 1330–1 and continued to invest heavily in tithes from the same area over the next three decades. He was a major Hartlepool shipowner and the scale of his activity is demonstrated by his ship the *Cuthbert*, which was lost off the coast of Denmark on its way to the Baltic, and valued at £600.¹¹⁹ Nesbit was only one of a clutch of merchants from the towns of north-east England who invested over a hundred pounds in grain tithe purchase during the 1330s and 1340s.

The fact that certain individuals and certain groups were able to prosper does not mean the second quarter of the fourteenth century was a period of urban and commercial prosperity in the Tyne Tees region. Shortage of money contributed to the low grain prices in the North-east and elsewhere and there is no sign of increased demand for grain in the Tyne Tees region, despite the activities of a handful of urban merchants.¹²⁰ Nor should the demand for pastoral products be exaggerated. Even though there is evidence of the renewed growth of wool exports after the second decade of the century, prices were unstable during the 1320s and fell during the 1330s; limited price evidence from the North-east suggests the region suffered as badly, and perhaps worse, than elsewhere.¹²¹

The decades prior to the Black Death were a difficult period for the Durham economy, as is reflected in the very limited recovery of arable production. Non-arable sectors of the economy probably performed a little better but the difference is unlikely to have been significant enough to permit the large-scale transfer of resources. Long-term insecurity, and the slow process of rebuilding resources, are likely to have made all kinds of economic activity in the countryside difficult.

¹¹⁷ Ravensflat was located where Belmont and Broomside now stand. Although Watts has located Ravensflat in the parish of St Giles, the tithe receipt sections of the bursars' accounts show that, for tithing purposes at least, it was in Pittington parish: V. Watts and J. Insley, *A Dictionary of County Durham Place-Names* (Nottingham, 2002), p. 101. For tithe receipts referred to here see: DCM, bursars' accounts; Pittington manor accounts 1309–10, 1324–5.

¹¹⁸ N. Hybel, 'The Grain Trade in Northern Europe before 1350', *Economic History Review* 55 (2002), 240–1.

¹¹⁹ Fraser, 'Pattern of Trade', 52–3; *The Victoria History of the County of Durham*: 3, ed. W. Page (London, 1928), p. 276.

¹²⁰ Britnell, *Commercialisation*, pp. 179–85.

¹²¹ T. H. Lloyd, *The Movement of Wool Prices in Medieval England* (London, 1973), pp. 18, 40–1, 62–3.

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This examination of the pre-Black Death rural economy in the Tyne Tees region presents some features familiar to both the *Annaliste* and Anglo-American historiographies. Rising output up to 1312, apparently sustained by demographic growth in the countryside, can be interpreted in Malthusian terms: the abundance of available resources permitted population expansion. Growth was not, however, terminated by Malthusian crisis: there was never a point at which the expansion in the number of mouths to feed threatened to exhaust available resources. If the absence of Malthusian crisis in the Durham region could have been predicted, the catastrophic and long-term impact of the crises of the 1310s and 1320s could not. In Durham at least, it is impossible to deny the deep and long-lasting effect of outside factors on the rural economy. The pre-1312 expansion in grain production between the Tyne and Tees, one phase of which is captured by the earliest tithe data from the late thirteenth and early fourteenth centuries, was never repeated in the middle ages. The ravages of famine and war ushered in a period of low and stagnating arable production which lasted over two centuries.

Pestilence, 1349–c.1440

Responses to the Black Death varied from awestruck horror to hard-headed practicality. Gabriele de' Mussis, a lawyer from Piacenza, wrote a heart-rending account of the pestilence beginning with the words 'Listen everybody, and it will set tears pouring from your eyes'.¹ Managers and administrators, less interested in holding an audience's attention, could be more down-to-earth. Thomas de Graystones, prior of the monastic cell at Finchale a few miles from Durham, commented that there was 'no hope' of collecting rental arrears from the year of the Black Death 'because the debtors disappeared in the mortality'.²

Modern historians have also presented very different views of the Black Death. Estimates of the death toll have gone up and down. One historian suggested as few as 5 per cent of the total population were carried off but more recent work has revised estimates of mortality upwards to perhaps 60 per cent.³ This higher figure is in keeping with the conclusions of a study of the death toll in the Tyne Tees region by Lomas which suggests over 50 per cent of Durham Priory tenants died. Likewise, Larson has used entry fines to estimate mortality of 55–65 per cent on the Durham bishopric estate. Although these sources do not provide ongoing demographic indicators, Lomas used the number of tenants recorded in priory rentals to suggest that population had failed to recover by the end of the fourteenth century.⁴ This conclusion is supported by the tithe data.

In order to demonstrate the non-recovery of the population of the Tyne Tees region in the half century following the Black Death, two sample periods were chosen from which large numbers of tithe data survive and which do not contain years of exceptional abundance or dearth: 1333–43 and 1406–16. The deflated cash receipts from sold tithes shown in figure 2 indicate a fall in grain production of some 47 per cent between the two periods. In fact, this is remarkably close to

¹ Gabriele de' Mussis, *Historia de Morbo* extracted and translated in *The Black Death*, ed. R. Horrox (Manchester Medieval Sources, 1994), p. 18.

² 'se exonerat de xxiiij li. xij s. iij d. ob. de arreragiis anni Domini, &c. XLIX, de quibus non est spes, quia debitores evanuerunt per mortalitatem': *The Priory of Finchale: the Charters of Endowment, Inventories and Account Rolls*, ed. J. Raine (Surtees Society 6, 1837), p. xxxvi.

³ J. F. D. Shrewsbury, *A History of Bubonic Plague in the British Isles* (Cambridge, 1971); O. J. Benedictow, *The Black Death, 1346–1353: the Complete History* (Woodbridge, 2004), p. 382.

⁴ P. L. Larson, 'Conflict and Compromise in the Late Medieval Countryside: Lords and Peasants in Durham, 1349–1430' (unpublished Ph.D. thesis, Rutgers, The State University of New Jersey, 2004), p. 97; R. A. Lomas, 'The Black Death in County Durham', *Journal of Medieval History* 15 (1989), 130, 134–5. For further discussion of the Durham Black Death mortality evidence see: Benedictow, *Black Death*, pp. 363, 366–7.

Lomas's estimate that population was 'about 45 per cent lower at the end of the [fourteenth] century than it was just before the plague in 1349'.⁵

However, a directly proportional relationship between aggregate cereal production and population should not be assumed. After all, some arable output was eaten by animals and patterns of human consumption changed. Grain tithe output data from Billingham in the two sample periods indicate the possible nature of these changes and are shown in table 9.

Table 9. Billingham township tithe output before and after the Black Death (quarters)

	wheat	barley	oats	legumes	total
1333–43 (mean; N=6)	43	54	7	22	126
1406–16 (mean; N=9)	20	56	9	23	108

N = the number of harvests for which grain tithe output data survive.

Total grain production in this township with fertile soils does not seem to have fallen as much as the aggregate levels for the region as a whole (figure 2). However, the patterns shown by the grain tithe output data in table 9 are compatible with a fall in population. Production of oats and legumes was roughly the same in the early fifteenth century as it had been before the Black Death. However, the rising importance of the pastoral sector in the late fourteenth and fifteenth centuries probably meant an increasing proportion of oats and legumes output was consumed by animals. Barley production actually increased slightly over the same period, probably reflecting rising per capita consumption of ale.⁶ Wheat production is likely to be more closely related to overall population levels. In Billingham it stood at less than half its pre-1349 level in the early fifteenth century, even though other sources suggest per capita wheat consumption increased in the period after the Black Death. This indicates, therefore, that the number of people fed by Billingham township wheat production had fallen by something over half between the two sample periods.⁷

Unfortunately the analysis of Billingham tithe output is difficult to replicate for other townships because of the small number of years in which tithes were collected as corn rather than sold. What is more, the practice of collecting tithes directly only in poor years when output was low and high bids were not received for tithe purchase means the sample years may not be representative.⁸ Nevertheless, the grain tithe receipts and cash receipts from sold tithes support other

⁵ Lomas, 'Black Death', 135.

⁶ B. M. S. Campbell, *English Seigniorial Agriculture, 1250–1450* (Cambridge, 2000), pp. 244–5. For expanding ale consumption and its impact on agriculture see: J. A. Galloway, 'Driven by Drink? Ale Consumption and the Agrarian Economy of the London Region, c. 1300–1400', in *Food and Eating in Medieval Europe*, ed. M. Carlin and J. T. Rosenthal (London and Rio Grande, 1998).

⁷ C. Dyer, *Standards of Living in the Later Middle Ages: Social Change in England c. 1200–1520* (Cambridge, 1998), pp. 158–9.

⁸ B. Dodds, 'Managing Tithes in the Late Middle Ages', *Agricultural History Review* 53 (2005), 136–7.

evidence for the lack of sustained demographic recovery in the Durham area in the fifty years after the Black Death.

Bleak though the overall picture is, it must not distract from the complexity of trends in arable production in the years after the arrival of the Black Death in 1349. Between 1348 and 1350 output fell by over one half but the following decade saw strong recovery. Remarkably, in 1358 arable output seems to have actually exceeded pre-plague levels. The post-Black Death recovery was sharply curtailed in the early years of the 1360s and, in the exceptionally poor years 1366 and 1367, output plummeted once more. There followed over two decades of sharp fluctuations. In the three exceptionally good harvests in 1376–8, production averaged three-quarters of 1291–5 levels and actually exceeded the 1341–8 mean. 1386 and 1388 were also years of abundance, although not quite as bountiful as the late 1370s. These good years were punctuated by a series of exceptionally poor harvests in 1374, 1375, 1381, 1385 and 1390 in which arable output barely exceeded one-third of late-thirteenth-century levels and plumbed the depths of the early 1350s.

On the heels of the sharp fluctuations of the 1370s and 1380s, there followed a decade and a half of severe crisis. The years 1394–1402 saw a plunge in production levels, during which output fell from just under half to just over one-fifth of its late-thirteenth-century level. The harvest of 1401 is the worst in the whole series up to this point, with arable production falling even lower than in 1350. The turn-of-the-century crisis was followed by a phase of renewed stability in the first three decades of the fifteenth century. Average output between 1404–31 was lower than that between 1360–89 but with fewer sharp fluctuations, especially for the decade 1412–23.

The stability of the early fifteenth century was brought to an end by a series of crisis years in the 1430s, the last of which produced the lowest arable output estimate of the whole series. The first crisis year was 1432, in which output fell to just over one-fifth of late-thirteenth-century levels. This was followed by very poor harvests in 1433, 1435, 1437 and 1438, a run of bad harvests unparalleled in the rest of the series.

The aim of this chapter is to define the changes in the eighty years or so following the Black Death and the response they elicited from the producers of the Tyne Tees region. The remarkable period of recovery in grain production levels which followed the arrival of plague in 1349 is the subject of the first section. The next examines economic activities outside the arable sector in the region, looking particularly at the potential for diversification after the end of the recovery in grain production. The scale of the changes undergone by the rural economy during the second half of the fourteenth century is reflected in rising social tension in the villages. Finally, the third section considers the periods of crisis around the turn of the century and in the 1430s and their implications for the demographic history of the century after the Black Death.

'Indian summer'?

Bridbury famously dubbed the decades after the Black Death the 'Indian summer' of demesne farming. High grain prices meant landlords could still make a profit, despite labour costs creeping upwards. Only in the 1370s, when grain prices collapsed, were profit margins squeezed, forcing landlords to resort to leasing.⁹ This chronology seems to have applied to the leasing of manorial demesnes in north-east England too since direct cultivation of the Durham Priory manors only began to be wound up after 1370.¹⁰ Aggregate grain output indices suggest, however, that conditions were not only favourable to demesne managers in the region: it appears the arable sector as a whole enjoyed an Indian summer.

The rapid recovery in aggregate arable production levels in the aftermath of the Black Death is surprising when considered in the light of production strategies. As described in chapter 2, tithe output in this period derived from some larger farms, including manorial demesnes, but mainly from holdings which are likely to have been family units of production and consumption. This would mean that, unlike the profit-conscious managers of manorial demesnes, most tithe payers were primarily subsistence cultivators. They only needed to feed their families and generate a surplus for the market in order to make the payments required of them. If this was the case, then grain production should have remained low, and possibly even fallen, in the 1350s and 1360s. Subsistence needs were cut since plague had carried off over half the inhabitants of the villages, meaning there were fewer mouths to feed. Prices were rising, meaning fixed rents and payments could be made through the sale of fewer units of output. What is more, the level of payments demanded should also have been reduced. Landlords had difficulties finding tenants and workers so their only option was to offer more favourable terms. The logical result would have been falling rents and the cutting or abolition of payments. Peasant producers would be required to produce less, not more, in order to satisfy the demands made of them by external authorities.¹¹

One possible explanation for the apparently counter-intuitive increase in aggregate grain production after the Black Death is that landlord demands on tenants did not really fall in the way described above. After all, landlords faced with the prospect of falling revenues might respond by clamping down on their tenants and ensuring any shortfall was made up by increasingly rigorous enforcement of their rights. Britnell has described attempts at just such a 'feudal reaction' on the Durham bishopric estate. The bishop's officers tried to force fugitives to return and take up their holdings once more. Vacant tenements were committed to individuals and sometimes to whole townships.¹² Other landlords in the region might

⁹ A. R. Bridbury, 'The Black Death', *Economic History Review* 26 (1973), 580–4.

¹⁰ R. A. Lomas, 'The Priory of Durham and its Demesnes in the Fourteenth and Fifteenth Centuries', *Economic History Review* 31 (1978). The absence of surviving manorial accounts from the period between the early 1340s and the late 1360s hampers the understanding of developments on the Durham Priory estates during this period.

¹¹ M. M. Postan, *The Medieval Economy and Society: an Economic History of Britain in the Middle Ages* (Harmondsworth, 1972), pp. 201, 229–30.

¹² R. H. Britnell, 'Feudal Reaction after the Black Death in the Palatinate of Durham', *Past and Present* 128 (1990), 32–6.

have followed suit. Despite the paucity of surviving evidence, Larson found hints that there was a similar 'reaction' on the priory estate.¹³

If they had worked, such measures might have led to rising grain production as tithe payers struggled to produce for sale in order to meet the demands imposed on them. In reality, the effectiveness of feudal reaction was mixed. Even during the 1350s peasants frequently resisted the demands of the bishop's officers. Some moved from village to village without permission. For example, in 1353 two of the bishop's neifs from Monkwearmouth were living in Southwick, both townships in a parish from which the monks collected grain tithes. They had not returned by 1360. Others negotiated the terms on which they held land and refused to take on vacant holdings. In the end, although it was in the interest of landlords to make it very clear that changed circumstances did not diminish their customary rights, economic conditions forced them to make concessions.¹⁴ It seems unlikely that there was a widespread increase in the level of payments imposed by landlords on tenants in the region.

Other factors also suggest peasants' cash needs fell, rather than increased, in the aftermath of the Black Death. Improvements in the military situation must have markedly reduced the burden of taxation. The 1340s had seen an unwelcome revival of Scottish military fortunes with the return from exile of the young king David II and the resumption of raiding. The menace from the Scots had seemed stronger than ever with the possibility of a French invasion in their support. At the battle of Neville's Cross in 1346, however, the threat was decisively quashed with the capture and imprisonment of the young king.¹⁵ Although there is no way of assessing the burden of taxation in the Tyne Tees region, it is likely that this drain on tithe payers' resources was considerably reduced from 1346. A peasant who produced for the market only to meet the demands of outsiders would have good reason to reduce his surplus if the tax collectors did not appear.

If the proportion of produce taken by lords did not increase during the 1350s and 1360s, then the post-Black Death recovery in output must be explained by cultivators' initiative. Either they produced more grain for their own consumption or they produced more for sale in order to raise cash income for some other purpose. The scale of the recovery in output is considerable. Arable output in 1358–62 was nearly three-quarters its 1341–8 level at a time when population must have been scarcely half its pre-Black Death level. This implies a 50 per cent increase in per capita output.

Aggregate arable production levels seem to have risen in the 1350s in response to rising per capita grain consumption. This would be a ready explanation in regions with many very small holdings before the Black Death, where peasants struggled to produce enough to subsist, meaning the amount of grain consumed per person rose as soon as circumstances permitted it. Although such conditions did not prevail in the Tyne Tees region, it is possible that insecurity caused by the military situation prior to 1346 had depressed output and reduced the amount of grain available for consumption. It is easy to let the advent of the Black Death

¹³ Larson, 'Conflict and Compromise' (unpublished thesis), pp. 147, 343.

¹⁴ Britnell, 'Feudal Reaction', 40–7; Larson, 'Conflict and Compromise' (unpublished thesis), pp. 156, 181–5.

¹⁵ M. C. Prestwich, *Plantagenet England, 1225–1360* (Oxford, 2005), pp. 245–6.

overshadow the decisiveness of the battle of Neville's Cross but, even as late as the 1420s and 1430s, the monks did not make the same mistake. In their tabulation of tithe income, discussed in detail in chapter 2, they used data from 1348, which they describe as 'two years after the Durham War and one year before the Great Pestilence'.¹⁶ This terminology reflects the significance of the battle in the region's history. An increase in grain consumption during the 1350s seems to have been facilitated by the elimination of supply-side restraints with the increased security of the military situation after 1346.

It is possible that the rising cash receipts from sold tithes after the Black Death shown in figure 1 actually reflect shifting patterns of grain consumption rather than any overall increase in output. Later in the fourteenth century, Langland famously condemned the grumbling workers for accepting only 'the finest kinds of bread, with names like 'cocket' and 'clear-matin' and 'only the most select nut-brown ales the brewers could offer'.¹⁷ Rising wages in the labour shortage after the Black Death, and the greater availability of land, meant people no longer wanted to consume cheap grains but showed a preference for more expensive wheat and barley.¹⁸ This change in consumption patterns is likely to have translated to a shift in production. No Durham grain tithe data survive between the mid-1340s and the end of the fourteenth century. However, the very rapid increase in receipts from tithes sold for cash after the Black Death shown in figure 1 may reflect a rise in the value of the average quarter of grain taken as tithe if it contained a greater proportion of expensive wheat and barley. The prices used to deflate the indexed cash receipts from sold tithes are based on the value of a quarter of grain composed of fixed quantities of wheat, barley, oats and legumes. The proportions of these grains used to calculate the price of an average quarter have not been adjusted for the period after the Black Death. However, if the value of the average quarter of grain produced rose then the failure to adjust the proportions used to estimate the price of an average quarter could impart an artificial upward trend to figure 2. In other words, rising cash receipts from sold tithes may reflect an increase in the relative proportion of expensive grains produced rather than an overall increase in output.¹⁹ However, the increase in quantities of wheat and barley produced relative to fodder crops in the aftermath of the Black Death should not be assumed. Consumption of meat and animal products also increased, meaning demand for fodder crops might also have risen. Tithe evidence from the early fifteenth century suggests the importance of fodder crops had increased as a proportion of total output.²⁰ Likewise, evidence from manorial demesnes elsewhere in England suggests the pattern was more complex than a simple rise in the output of expensive grains for human consumption.²¹

¹⁶ 'ij annis post bellum dunelmense, et primo anno ante pestilenciam magnam': *Historiae Dunelmensis Scriptores Tres*, ed. J. Raine (Surtees Society 9, 1839), p. ccxlviii.

¹⁷ Langland's *Piers Plowman*, ed. A. V. C. Schmidt (Oxford World's Classics, 1992), p. 73.

¹⁸ Dyer, *Standards of Living*, pp. 158–9; C. Dyer, 'Changes in Diet in the Late Middle Ages: the Case of Harvest Workers', *Agricultural History Review* 36 (1988).

¹⁹ For a discussion of the impact of changing harvest composition on the series of estimated grain output indices, see the appendix below.

²⁰ See above, p. 72 and table 9, and below, tables 10 and 11.

²¹ Dyer, *Standards of Living*, pp. 158–9; Dyer, 'Harvest Workers'; Campbell, *Seigniorial Agriculture*, pp. 246–7, 275–6, 301–2.

Overall, it is likely that figure 2 reflects a real rise in output during the 1350s and early 1360s.

There is no way of calculating how much of their output producers consumed themselves and how much they marketed. In the light of the evidence discussed above, it appears that peasants in the Tyne Tees region probably were producing more grain for their own use during the 1350s. Even so, the scale of the increase (perhaps up to 50 per cent per capita) suggests the amount of grain sold also rose. Far from producing less grain for the market as cash demands made of them fell and prices rose, the Durham peasants seem to have produced more, a positive price response as shown in figure 4. Even allowing for the fact that some of the increase in production never reached the market, the rise in cash income on holdings during the 1350s and 1360s must have been substantial. The best indicator here is the series of undeflated indices of receipts from tithes sold for cash shown in figure 1: in 1358–62 cash receipts from sold tithes were over 93 per cent of their 1341–8 levels. The cash value of tithes can be used as a proxy for the cash value of grain output. Given that population cannot have recovered from the ravages of the Black Death in so short a space of time, it is likely that there was a sharp increase in cash income from grain sales per producer. Increased spending power would mean producers were able to meet rising consumer needs.

Some clues are available as to how producers increased per capita output in the aftermath of the Black Death. The new balance between people and land in the townships of the Tyne Tees region meant cultivators were able to increase their productivity. Court records reveal that only the fertile patches of fields were sown and the accumulation of holdings by survivors must have permitted greater flexibility and responsiveness.²² In fact, responsiveness to the high grain prices of the aftermath of the Black Death meant vacant lands were not so widespread as might be expected given the scale of recent demographic dislocation. Although sums for waste and decayed rents were first given at the end of the priory bursars' accounts immediately after the Black Death, over the following decade or so the size of the allowances fell, indicating the reoccupation of land.²³ Nor do vacancies seem to have been widespread on the bishopric estate.²⁴

Producers were able to use increased cash income to pay for better land and privileges, thus facilitating further rises in productivity. Already before the Black Death the priory bursar and terrar had begun to adjust their system of grain supply to the convent. This meant they relied more on tithes and leased parcels of demesne land. This movement gathered pace after 1349, meaning more and more high quality demesne land became available.²⁵ Evidence from the bishopric estate shows that tenants were prepared to pay a premium for good land. In 1357, the tenants of Bishop Middleham, a township from which the monks of Finchale Priory collected grain tithes, offered to pay higher rents if they could

²² B. Dodds, 'Peasants, Landlords and Production between the Tyne and Tees, 1349–1450', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), p. 181.

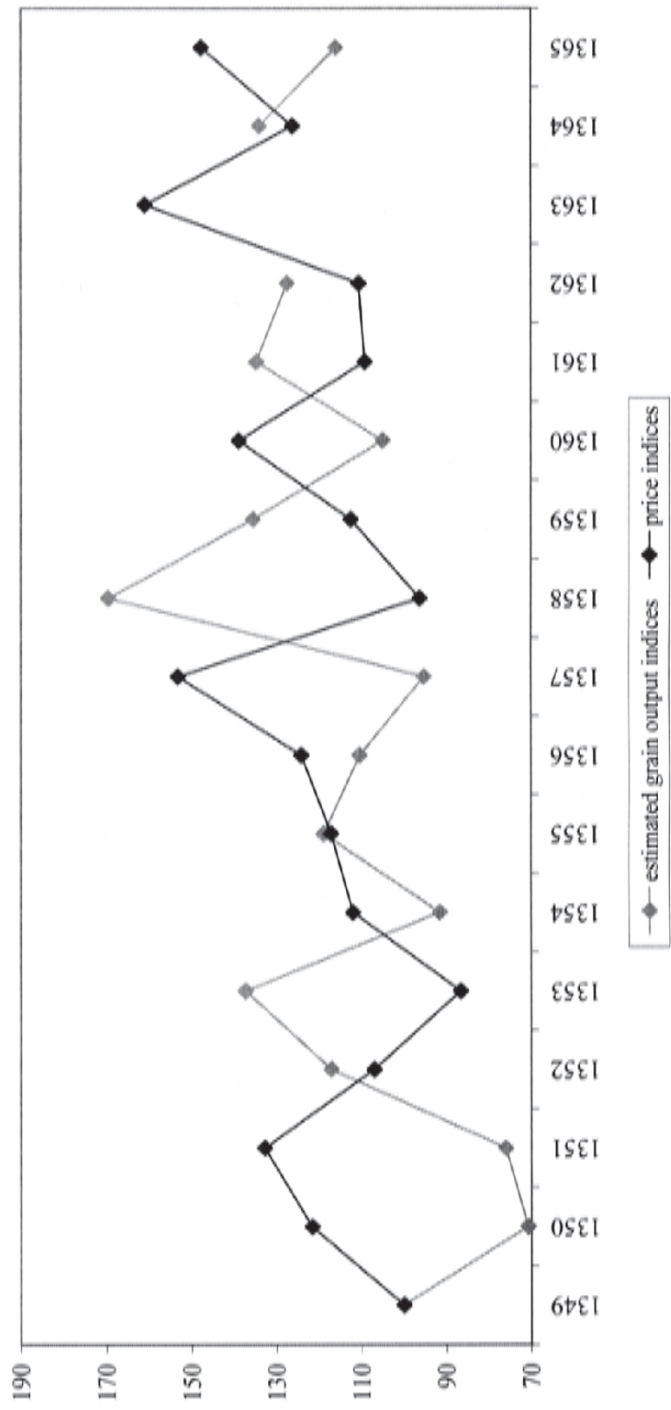
²³ R. A. Lomas, 'Durham Cathedral Priory as a Landowner and a Landlord, 1290–1540' (unpublished Ph.D. thesis, University of Durham, 1973), pp. 29–30.

²⁴ S. J. Harris, 'Wastes, the Margins and the Abandonment of Land: the Bishop of Durham's Estate, 1350–1480', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), pp. 205–8.

²⁵ Lomas, 'Demesnes', 341–5; Dodds, 'Peasants, Landlords and Production', pp. 133–4.

Figure 4. Estimated grain output and grain price indices, 1349–1365

Index: 100 = 1349 levels



Source: the estimated grain output indices are those presented in figure 2. The grain price indices are based on north-eastern prices and are those used for deflating the cash tithe indices (see appendix).

take on lands nearer the village.²⁶ Larson's discussion of the 'bishop's widows' reveals a similar phenomenon. These women appear to have been widows of free customary tenants and, during the 1350s, particularly high marriage fines were demanded when they remarried. The willingness of suitors to make these payments reflects the price they were prepared to pay for 'old and well cultivated land' in the 1350s, even though there must have been no shortage of available holdings.²⁷

Increased cash income was also spent on commutation payments for labour services. Although there had been piecemeal commutation before the Black Death, its scale was increased after 1349 and new centralised procedures were introduced to administer the change.²⁸ These were not payments wrung out of a subject peasantry by heavy-handed feudal landlords but rather payments which tenants chose to make to improve their circumstances, freeing up time and contributing to further rises in per capita productivity.

The 1350s and 1360s must have been good decades, in economic terms at least, for all the different groups of producers between the Tyne and Tees. Those with larger holdings, like the owners or tenants of manorial demesnes, stood to benefit from high grain prices. Wealthier peasants could increase their income by acquiring parcels of high quality land, perhaps by marrying the 'bishop's widows', or by taking on parcels of demesne land for lease. Not only was land abundant, but customary tenants were able to free their labour resources by paying for the commutation of labour services. Peasants with smaller holdings were in a similar position. For the first time, perhaps, high quality land was available for them to build up their holdings without the risk of depredation and theft by raiders. High levels of land occupation indicate competition to take on good land and benefit from the high grain prices. Information on wage levels in the North-east has not yet been compiled, and is scarce because of the poor survival of manorial accounts. However, Bishop Hatfield's repeated attempts to ensure the enforcement of the Ordinance and then Statute of Labourers indicates upward pressure on wages.²⁹ This suggests that those who did not take on holdings, or worked for wages to supplement household income, also reaped the rewards of the post-Black Death boom.

The term 'Indian summer' suggests that the rural economy basked in the warm glow of bygone days: change was delayed and the 'first frosts' were yet to appear.³⁰ This atavistic metaphor is not appropriate to describe the rural economy in the Tyne Tees region after the Black Death. Peasant cultivators were presented with a range of new opportunities to increase arable productivity and to take advantage of high prices. The fact that they did so, instead of retreating into a subsistence economy, sheds interesting light on the priorities and decision-

²⁶ Britnell, 'Feudal Reaction', 46.

²⁷ Larson, 'Conflict and Compromise' (unpublished thesis), pp. 127–31.

²⁸ R. A. Lomas, 'Developments in Land Tenure on the Prior of Durham's Estate in the Later Middle Ages', *Northern History* 13 (1977), 37; Larson, 'Conflict and Compromise' (unpublished thesis), pp. 216–17.

²⁹ Britnell, 'Feudal Reaction', 29.

³⁰ Bridbury, 'The Black Death', 584–5.

making of non-seigneurial cultivators in the middle ages. These issues will be returned to and examined at greater length in chapter 6.

Although grain prices continued to rise into the mid-1370s, the recovery of aggregate grain output in the Durham region ended in the mid-1360s.³¹ One reason for the end of recovery is likely to have been that per capita productivity could rise no further. As indicated above, rising productivity is likely to have been achieved partly through the concentration of cultivation on the most fertile lands and the greater availability of high quality land for lease. The commutation of labour services would also have increased the amount of time available to cultivators for work on their own holdings. However, such factors did not permit productivity to rise indefinitely and the limit seems to have been reached when grain output approached three-quarters of pre-Black Death levels. After all, as suggested above, assuming no increase in the number of labourers over the same period, this would imply a 50 per cent increase in per capita production.

Outside factors are also likely to have played a part in curtailing the expansion of production just over a decade after the Black Death. The national outbreaks of pestilence in the 1360s are well-known and the Tyne Tees region appears to have been affected in 1360–1 and then again in 1369–70.³² However, there does not appear to have been an immediate and direct relationship between recorded plague outbreaks and disruption in arable output. Figure 2 suggests that 1361 and 1370 were not years of particularly low output: estimated production levels were lower, for example, in 1357 and 1366–7, when there were no recorded plague outbreaks. The relationship between grain output and episodes of high mortality will be considered in detail below.³³

Despite the uncertainties over the immediate impact of disease outbreaks on grain output, information on the occupation of the land suggests mortality was an important factor. Allowances in the bursars' accounts for land from which a full rent was not received, which had fallen in the 1350s, accumulated once more from around 1360. The earliest examples of whole townships failing to render tithe income because the land ceased to be sown date from the 1360s too.³⁴ The priory bursars responded immediately to the difficulties and replaced tenancies for life with short-term leases for a number of years from the 1360s.³⁵ The appearance of new vacancies of land at the same time as the return of epidemic disease suggests renewed mortality may explain the end of the post-Black Death boom in arable production.

³¹ Ibid.

³² See *Black Death*, ed. Horrox, pp. 85–8 for extracts from chronicles with details of 1360s plague outbreaks. The evidence for the impact of these epidemics in the Tyne Tees region is given in B. Dodds, 'Durham Priory Tithes and the Black Death between Tyne and Tees', *Northern History* 39 (2002), 22.

³³ See below, pp. 97–100.

³⁴ Lomas, 'Durham Cathedral Priory as a Landowner and a Landlord' (unpublished thesis), pp. 29–30, 35–6; Dodds, 'Peasants, Landlords and Production', pp. 178–80, 187.

³⁵ Lomas, 'Land Tenure', 37; Larson, 'Conflict and Compromise' (unpublished thesis), pp. 207–12.

Diversification

There was clearly considerable change in the rural economy of the Tyne Tees region in the aftermath of the Black Death. The boom years of the 1350s and early 1360s are likely to have been accompanied by rising incomes and demand for some consumer products. Even with the onset of problems during the 1360s, arable farming remained profitable because of high prices. Figure 1 shows that cash receipts from sold tithes continued to rise up to around 1370 and it was not until the mid-1370s that the decisive turning point came. From around 1375 lower grain prices meant arable cultivation became less profitable.³⁶ The changing fortunes of grain producers had an effect on other economic activities in the region. Demand for non-arable products was probably strong during the period of rising incomes in the 1350s and 1360s. Following the collapse of grain prices, there may have been a switch to the production of non-arable products, reflecting the need of lords, tenants and labourers to maintain income. Pastoral farming is one such activity to which the Tyne Tees region was particularly well suited. Others, including coal mining and fishing, were restricted to certain communities within the region.

Pastoral production had always been important in the Tyne Tees region and there is evidence that output from this sector declined less than grain production in the late fourteenth century. In the absence of any livestock tithe data, this conclusion is based on other sources. Seigneurial livestock operations shed one shaft of light. As arable farming plunged from one crisis to the next after 1375, sheep numbers remained relatively stable on the priory bursar's livestock operation at Saltholme in Billingham parish. Indeed, the different histories of the priory's arable and livestock demesne operations suggest increased reliance on sheep and cattle as a source of income in this period. At the time when arable demesne operations were being leased, the bursar developed his stock farms at Muggleswick and Saltholme. The sacrist continued to manage his demesne a few miles north of Durham city at Sacristonheugh, where pasture farming predominated, throughout the late middle ages, the only exception being a phase of leasing in the early fifteenth century.³⁷

Less direct evidence suggests the apparent buoyancy of seigneurial pastoral operations was matched in the non-seigneurial sector. Lots of fines were imposed by the bursar and terror for the unlawful pasturing of animals in the decades following the Black Death, perhaps indicating the increased importance of livestock in the townships.³⁸ For example, in 1365 the tenants of Aycliffe were ordered not to allow various types of animals to stray into fields where wheat was sown until the crop had been harvested and taken away.³⁹ Grain tithe output data show the continued and even expanded significance of fodder crops from the end of the fourteenth century. Oats and legumes had always been grown in consider-

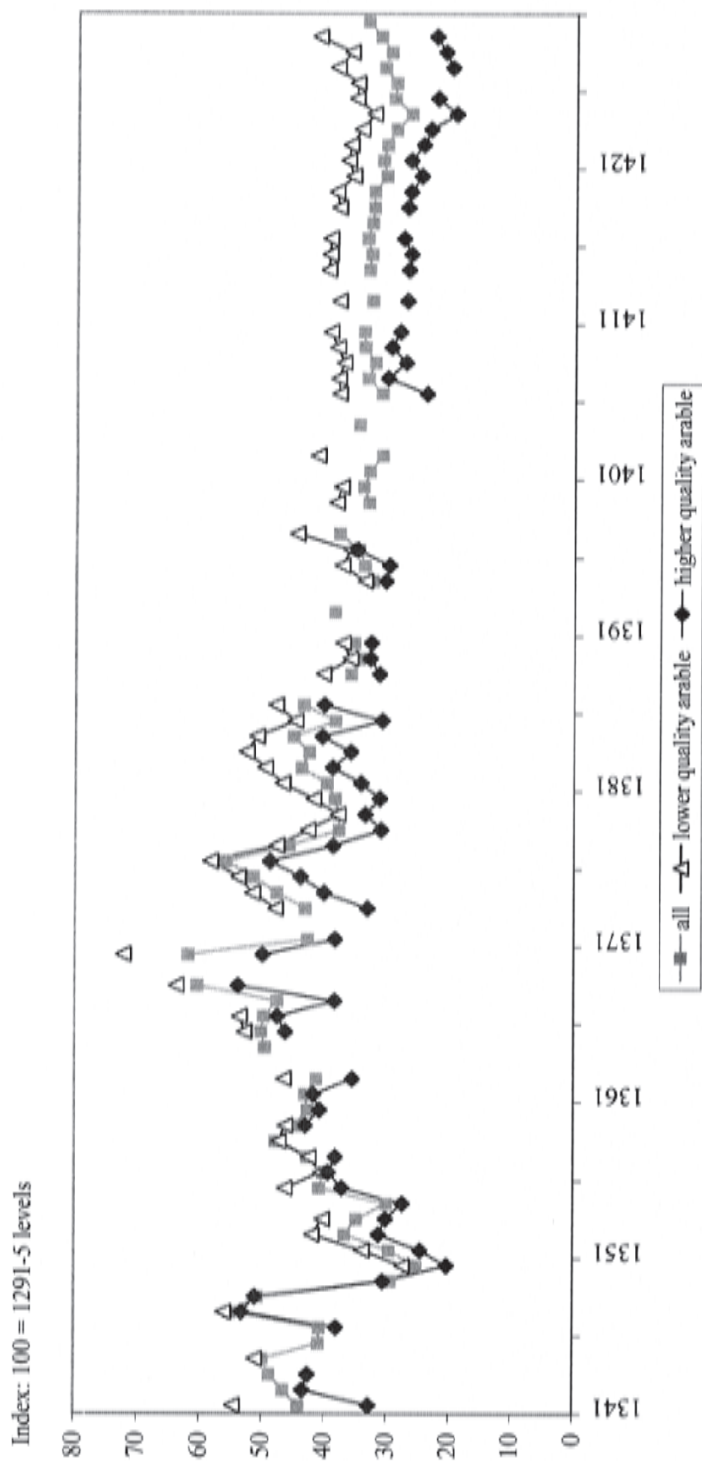
³⁶ D. L. Farmer, 'Prices and Wages, 1350–1500', in *The Agrarian History of England and Wales*, 3: 1348–1500, ed. E. Miller (Cambridge, 1991), p. 434.

³⁷ Dodds, 'Peasants, Landlords and Production', p. 191; Lomas, 'Demesnes', 349–51.

³⁸ Larson, 'Conflict and Compromise' (unpublished thesis), p. 246.

³⁹ *Halmota Prioratus Dunelmensis: 1*, ed. W. H. D. Longstaffe and J. Booth (Surtees Society 82, 1889), p. 47.

Figure 5. Indexed receipts from tithes sold for cash in areas of differing land fertility, 1350–1430



Notes: the classification of land in townships is based on that given by Bailey, *General View of the Agriculture of the County of Durham* (London, 1810). Parishes in areas of 'lower quality arable' include Monkwearmouth, Dalton-le-Dale, Monk Hesleden, Bishop Middleton, Kirk Merrington, Heighington. Parishes in areas of 'higher quality arable' include Aycliffe, Jarrow. See chapter 2 for further discussion of the physical characteristics of land in the priory's appropriated parishes.

able quantities in the region but, if late-fourteenth- and early-fifteenth-century grain tithe data are compared with those from before the Black Death, output of fodder crops is shown to have risen in importance as a proportion of total output (tables 9, 10 and 11). Given that human consumption of oats and legumes is likely to have fallen in a period of rising real incomes, this shift strongly suggests the relative strength of the pastoral sector by comparison with the arable.

The increasing importance of the pastoral sector of the rural economy is also suggested by a comparison of trends in cash receipts from sold tithes in the different geographical sub-regions where priory parishes were located. Figure 5 shows a widening gap between cash receipt indices in the areas best suited to arable cultivation and those where soils were less fertile.⁴⁰ The difference is particularly marked from the 1370s when the downturn in grain prices occurred. This indicates a greater shift in the rural economy of the parishes where the highest proportion of land had been devoted to arable crops as producers turned increasingly to pasture farming. In less predominantly arable areas, cash tithe receipts were more stable because less adjustment was required in the rural economy and arable output had been lower in the first place.

Another reason for the difference in trends shown by the series of cash receipts from sold tithes shown in figure 5 may be that the mix of crops produced changed more markedly in the parishes situated on more fertile soils. In these areas, where the production of cereals for bread and brewing predominated, falling demand for grain for human consumption is likely to have led to a greater shift towards the production of fodder crops to support the expanding pastoral sector. This would lead to a sharper fall in cash tithe receipts because the fodder crops were cheaper and therefore the value of the average quarter of tithe grain collected fell. In other words, the substitution of cheaper legumes and oats for expensive wheat and barley would help cause the sharper fall in cash tithe receipts in the most fertile areas, shown in figure 5. This is reflected in the fragmentary grain tithe output data available, shown in tables 10 and 11. Aycliffe is situated on the region's more fertile arable land and the tithe output data show a marked shift away from wheat production towards the production of the fodder crops, oats and legumes. There was some expansion in barley production but this was not sufficient to offset the fall in wheat production. By contrast, the township of Shadforth is situated on the less fertile limestone escarpment and wheat production was relatively less important before the Black Death, perhaps reflecting the greater predominance of the pastoral sector. The data do show a fall in wheat production relative to that of oats and legumes, but the shift is not as marked as in Aycliffe. The evidence from Billingham township, presented in table 9, does not conform so neatly with this hypothesis, however. Billingham is situated in the most fertile land in the region but the increase in the relative importance of fodder crops (23 per cent to 29 per cent) is lower than in Shadforth (38 per cent to

⁴⁰ See below, pp. 175–7, for a discussion of the difficulties involved in splitting up the cash tithe receipt data. The categorisations used here are broad but any sharper comparison between production trends in individual townships runs into the problem of small samples. The categorisations used in figure 5 make available over fifteen individual receipts in most years for each sub-group of parishes, affording a reasonable sample size.

49 per cent). This discrepancy does not disprove the hypothesis, however, given the scantness of the data used for comparison.

Table 10. Aycliffe tithe output (percentages)

	wheat	barley	oats	peas and beans
1330s (1331, 1333, 1339)	56	10	16	18
early fifteenth century (1409, 1410, 1423)	28	21	18	33

Table 11. Shadforth tithe output (percentages)

	wheat	barley	oats	peas and beans
pre-Black Death (1330, 1333, 1344)	37	25	37	1
post-Black Death (1388, 1406, 1420)	18	33	43	6

The stability of the arable sector in townships where pastoral husbandry was important has been observed elsewhere in the period after the Black Death. In Derbyshire, in the mid-fifteenth century, arable rents fell much more sharply in lowland areas than in the uplands of the High Peak. Blanchard attributed the maintenance of the value of arable land in predominantly pastoral areas to the benefits afforded local grain producers by 'close connection with an expansive and buoyant animal husbandry'.⁴¹ It is worth pointing out that the contrast between the rural economies in the two categories of land used in figure 5 must have been much less marked than that between the lowland parishes in the east of the Tyne Tees region and the highland parishes in the west: unfortunately all the priory parishes from which tithe data survive lie east of the Pennine Spurs.

Rising incomes and improved living standards after the Black Death seem to have led to increased consumption of meat and dairy products. However, as described above, the divergence between the cash tithe receipt indices in the fertile and less fertile arable regions became increasingly marked from the 1370s, coinciding with a fall in the profitability of arable farming. Although it is clear why farmers might have wanted to switch resources away from the arable sector at this time, it is not clear that opportunities for pasture farmers were necessarily much better. Wool prices remained at a high level a little longer than grain prices but fell sharply in the 1380s, reflecting falling exports. Data from Newcastle show the trend in exports from the North-east was no different. However, it appears that prices for dairy produce held up better. A further shift to pasture farming from the turn of the fifteenth century may be explained by a short period of higher prices for livestock products. This coincides with Pollard's evidence for the mini-boom in the pastoral sector on certain estates in the region and with

⁴¹ I. S. W. Blanchard, 'Economic Change in Derbyshire in the Late Middle Ages, 1272–1540' (unpublished Ph.D. thesis, University of London, 1967), pp. 88–95.

a short phase of relatively buoyant wool prices.⁴² In fact, the explanation for increased involvement in pasture farming is likely to have been more complex than that provided by price movements alone. At a time when falling grain prices must have made it difficult for farmers to maintain rental payments, common pasture offered abundant and relatively cheap resources.⁴³ Whatever the cause, it does appear that pasture farming became more important in both the seigneurial and non-seigneurial sectors in the Tyne Tees region after the Black Death, especially from the 1370s.

A shift from arable to livestock-husbandry was not the only type of diversification in the late-fourteenth-century rural economy. For example, Hatcher's work on south-west England has revealed that the recovery of tin production was sufficient in some areas to provide a stimulus to arable rents.⁴⁴ There were various non-agricultural employment opportunities in the Tyne Tees region too and these probably played an increasing role after the Black Death and especially from the 1370s.

During the fourteenth century there were some major coal mining operations in the Tyne Tees region, most notably those at Whickham, on the south of the River Tyne, leased from the bishop of Durham for 500 marks a year in 1356.⁴⁵ Such valuable pits were very unusual, and did not exist within Durham Priory's appropriated parishes. Nevertheless, evidence from smaller-scale operations does suggest there was an increase in coal production during the second half of the fourteenth century. Pre-Black Death inventories and account rolls drawn up by the priors of Finchale, a dependent cell of Durham Priory outside the city, contain hardly any record of mining operations.⁴⁶ After 1350, however, they contain references to investment in pits, including the considerable sum of £10 0s. 9d. spent on searching for coal at Wingate in 1354–5.⁴⁷ From the early 1360s the priors' accounts begin to contain regular receipts from leased coal mines.⁴⁸ The cell's mining operations were expanded in 1372–3 with the payment of £2 6s. 7d. for the sinking of a pit in nearby Lumley. This appears to have been an extremely lucrative investment since in the same year the prior entered a receipt of £26 13s. 4d. from a coal mine in the same township.⁴⁹ New pits were sunk and new rents were received from mines perhaps in an attempt to make up for falls in other kinds of income. However, this policy was not entirely successful since many of the new enterprises did not last long.⁵⁰

⁴² E. M. Carus-Wilson and O. Coleman, *England's Export Trade, 1275–1547* (Oxford, 1963); A. J. Pollard, 'The North-Eastern Economy and the Agrarian Crisis of 1438–40', *Northern History* 25 (1989), 89–91; T. H. Lloyd, *The Movement of Wool Prices in Medieval England* (London, 1973), pp. 20, 42.

⁴³ Farmer, 'Prices and Wages, 1350–1500', pp. 502–13; R. H. Britnell, *Britain and Ireland 1050–1530: Economy and Society* (Oxford, 2004), pp. 415, 421.

⁴⁴ J. Hatcher, 'A Diversified Economy: Later Medieval Cornwall', *Economic History Review* 22 (1969), 209–11, 221–5.

⁴⁵ J. Hatcher, *The History of the British Coal Industry 1: Before 1700: Towards the Age of Coal* (Oxford, 1993), pp. 28–9, 72–3. For a summary of the evidence for coal-mining in Durham in the fourteenth century see *The Victoria History of the County of Durham*: 2, ed. W. Page (London, 1907).

⁴⁶ *Priory of Finchale*, ed. Raine, pp. i–xxxi. The only mention is a receipt of 19s. 6d. for coal sold from the pit at Lumley in 1348–9.

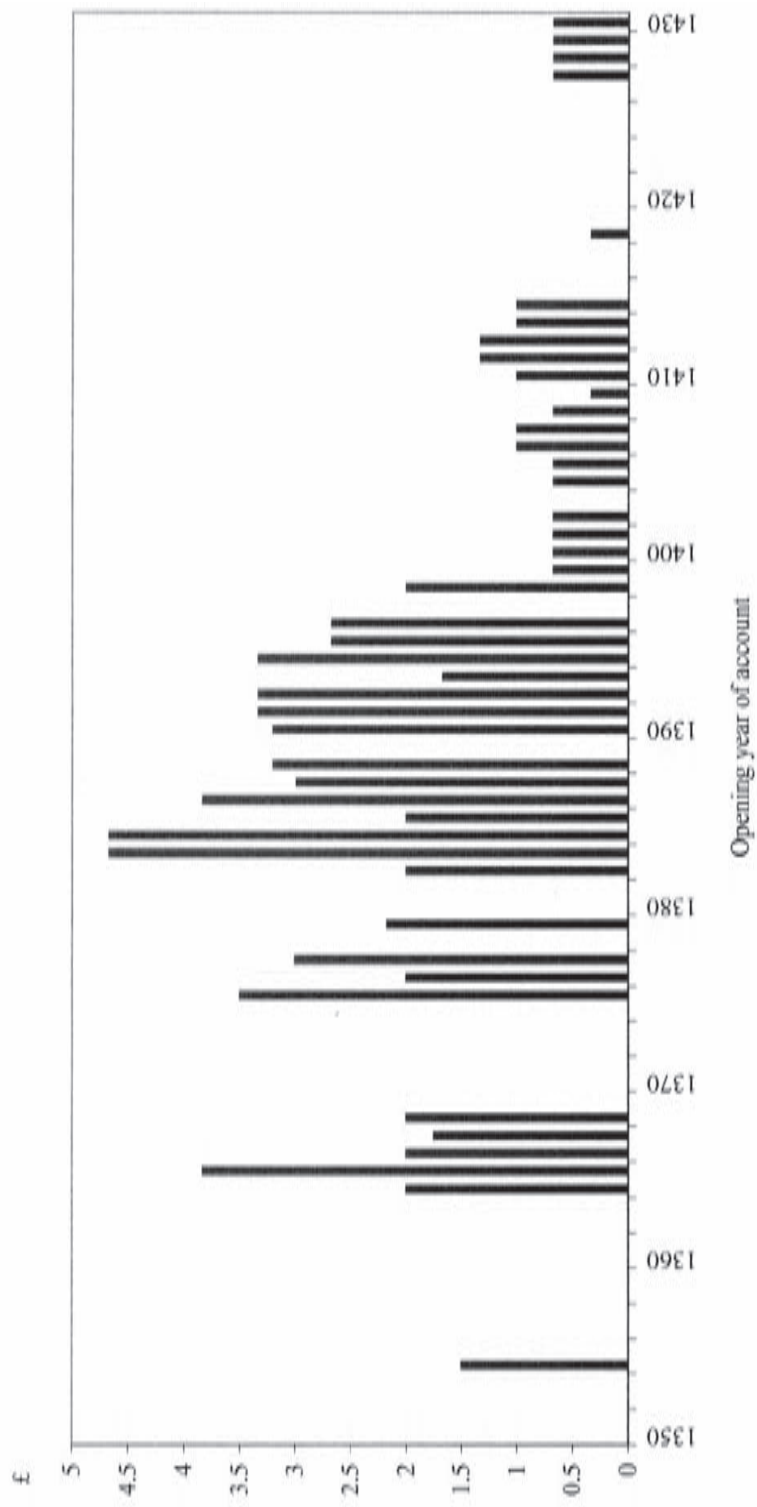
⁴⁷ *Ibid.*, p. xxxv.

⁴⁸ For what appears to be the first of a series of regular receipts from a pit at Softley see: *Ibid.*, p. lv.

⁴⁹ *Ibid.*, pp. lxxxv, lxxxvii.

⁵⁰ See for example the inconsistency in receipts from the pit at Lumley between 1372–3 and 1395: *Ibid.*,

Figure 6. Hostiller's receipts from coal tithes, 1350–1430



Not only the great landlords attempted to profit from coal mining. As early as 1256 there had been a complaint that the approaches to Newcastle were made dangerous by small-scale pits, some of which were abandoned and not fenced-off.⁵¹ Adhoc attempts to strike lucky continued after the Black Death. In 1371, for example, halmote court proceedings record an attempt by men of Westoe and Harton in Jarrow parish to dig for coal on someone's holding.⁵² The tithe data can be used to a limited extent to substantiate this picture. The infrequency of references to coal tithes in the accounts of the Durham office holders is probably explained by the fact that they were normally collected by the vicars along with the other small tithes. In the case of the parish of Durham St Oswald, however, the lack of an endowed vicarage means references to receipts from coal tithes do appear. The hostillers' receipts from this source, shown in figure 6, suggest expansion in cash income from coal tithes over the late fourteenth century. A phase of particularly high coal tithe receipts from the early 1380s coincides with the period of lower grain prices referred to above. However, this apparent evidence for rising coal production must be treated cautiously. The income from the sale of coal tithes might have been affected by changes in the quantity of coal from tithes used to supply the hostiller at Durham and therefore not sold. This might mean the relationship between income from coal tithes and coal output is distorted. Moreover, coal tithes were probably particularly difficult to collect, given the sporadic nature of production. Rising receipts during the 1380s may reflect increasingly efficient collection intended to offset falling income from grain tithes in the same period.

It is clear that income from coal mines could be significant even outside the townships where very large pits existed, such as Whickham, to the west of Gateshead, and Railey, to the south-west of Bishop Auckland. For example, in the parish of Durham St Oswald in 1384–5 £2 6s. 8d. was paid each for the coal tithes of the pits of John Fossour and Roger Couhird. This suggests annual production from each mine was probably worth something approaching £30. This was the equivalent of the value of the grain production from the leased demesnes of Bewley and Belasis in the same year (as estimated by multiplying the tithe sale price by ten). Not only the great lords made money from coal production in the late fourteenth century.

It is possible that rising production in the second half of the fourteenth century was a response to increasing demand for coal. The monastic cell at Jarrow had 'two iron chimneys or grates' as early as 1310 and coal had long been burnt alongside wood, charcoal and peat at the mother house in Durham. After the Black Death its use seems to have increased further. The hostiller, for example, paid for the construction of an iron chimney in his hall in 1356–7, presumably to permit heating by coal. By the 1390s Whitby Abbey was buying coal from Newcastle.⁵³ It is possible that increasing peasant and tenant incomes, at least up

pp. lxxxvii–cxv; Hatcher, *British Coal Industry*, pp. 75–6.

⁵¹ *Victoria County History Durham 2*, ed. Page, p. 321.

⁵² Larson, 'Conflict and Compromise' (unpublished thesis), p. 361.

⁵³ J. B. Blake, 'The Medieval Coal Trade of North East England: Some Fourteenth-Century Evidence', *Northern History* 2 (1967), 8–9; Hatcher, *British Coal Industry*, p. 412; *Extracts from the Account Rolls of the Abbey of Durham: 1*, ed. J. T. Fowler (Surtees Society 99, 1898), p. 124. I am grateful

to the mid-1370s, led to a rise in expenditure on coal outside aristocratic households. Little is known about coal consumption in poorer households but, by the fifteenth century, the *famuli* on the hostiller's demesne at Elvethall received part of their wages as coal.⁵⁴

The strength of demand for coal should not be exaggerated, however. It was not until later that coal became widely used as a domestic fuel. Even in the Tyne Tees region, where coal was readily accessible, it seems likely that poorer households would have relied on other fuels. These too must have been available, given the relatively small proportion of land devoted to arable in the region. Limited demand, along with other factors, contributed to sharp fluctuations in income from coal mines.⁵⁵ Even after relatively heavy investment, the Finchale priors could not guarantee stable receipts from their pits. Figure 6 suggests that high receipts from the small pits in the parish of Durham St Oswald became less frequent around the end of the fourteenth century. The precariousness of mining as a source of income and employment is also suggested by account entries such as the hostiller's receipt of £1 15s. 0d. for the tithe of Broom coal mine in 1367–8 when the accountant added the comment that more was not received because 'various pits there are waste'.

Coal mines required hired employees and, in years when production was high, their numbers must have been fairly substantial. Indeed, employees were not always easy to find in a period of labour shortage. In the 1370s Bishop Hatfield had to resort to impressment to secure workers for his operations at Whickham and Gateshead.⁵⁶ Some collieries in the early modern period seem to have been worked more or less continually throughout the year, and this probably applied at certain times to the largest operations between the Tyne and Tees during the late middle ages. However, work in the smaller collieries must have been very irregular indeed.⁵⁷ Pits often represented a supplementary source of income for their lessees and the same must have applied to the workers. For example, Richard Cowherd of Bearpark became involved in a dispute with the priory over his non-payment of coal tithes for pits in Broomhall in the parish of Durham St Oswald in the early fifteenth century. It is clear from the records kept by the monks on this complicated case, and from Cowherd's payment of garb and hay tithes in the same parish, that this mine owner also had extensive agricultural interests.⁵⁸

All told, it is likely that increasing industrial and domestic use of coal partly

to Dr Margaret Harvey for supplying me with the reference from the hostiller's accounts and for her generosity in sharing with me the results of her research on the use of coal by the monks of Durham.

⁵⁴ R. A. Lomas, 'A Northern Farm at the End of the Middle Ages: Elvethall Manor, Durham, 1443/4 – 1513/14', *Northern History* 18 (1982), 46.

⁵⁵ Hatcher, *British Coal Industry*, pp. 73, 77.

⁵⁶ *Ibid.*, p. 73.

⁵⁷ *Ibid.*, pp. 346–8. For the controversy surrounding the relationship between mining and the agricultural economy in the Derbyshire lead and Cornish tin mining communities see: I. S. W. Blanchard, 'The Miner and the Agricultural Community in Late Medieval England', *Agricultural History Review* 20 (1972); J. Hatcher, 'Myths, Miners and Agricultural Communities', *Agricultural History Review* 22 (1974); I. S. W. Blanchard, 'Rejoinder: Stannator Fabulosus', *Agricultural History Review* 22 (1974); I. S. W. Blanchard, 'Labour Productivity and Work Psychology in the English Mining Industry, 1400–1600', *Economic History Review* 31 (1978).

⁵⁸ DCM, Cartulary 4, ff. 100r–103v calendar available at <http://flambard.dur.ac.uk/dynaweb/handlist/ddc/dcdcart4/> (viewed November 2006). I am grateful to Dr Margaret Harvey for pointing out and explaining this case to me.

offset the effects of declining population on demand for coal in the late fourteenth century. There are hints that coal production expanded in response to demand. For some tenants and labourers, such as those in Durham St Oswald's parish, coal production seems to have represented a viable alternative to arable cultivation after the collapse of grain prices in 1375. However, on most of the priory estate at least, away from the largest coal mines in the region, the scale of the industry does not appear to have reached sufficient levels to support communities employed largely in coal-mining. Small pits appeared and then disappeared in what remained largely agricultural townships. Coal mining did not represent a major long-term source of income upon which large numbers of people could depend in the Tyne Tees region.

Another potential source of income for some communities was fishing. In south-west England, for example, the late middle ages saw great expansion of the sea fishing industry, benefiting the communities on the coast where the number of 'fisher-farmers' increased, along with their profits.⁵⁹ On the east coast too, fishing became an increasingly important source of income for some Suffolk villages in the late fourteenth century, although this boom was short-lived and had ended by the early fifteenth century.⁶⁰

Similar trends are observable in the Durham Priory village of South Shields. A reference to the receipt of tithes from 'both boats and cobles' in 1370–1 gives some clues as to the type of fishing carried out there.⁶¹ The coble was a small vessel characteristic of north-east England, probably crewed by three to five men, which could be launched from the beach against heavy breakers. In sixteenth-century North Shields cobles were sufficiently small for each fisherman's house to have one moored outside. This type of boat is likely to have been used for inshore fishing trips on which salmon and crabs were caught, the South Shields tithes of which were sometimes sold separately.⁶² The distinction made between 'boats' and 'cobles' suggests two different types of vessel are being referred to in the 1370–1 South Shields tithe receipt entry. It is possible that the 'boats' were larger vessels designed for fishing in deeper waters.⁶³ Evidence from elsewhere on the east coast suggests these longer trips yielded catches of sprats and herrings, along with smelt and dogdraves (a type of cod).⁶⁴

In the thirteenth and early fourteenth centuries there were around twenty-five tenants in South Shields but by 1396 there were forty-four tenements held by forty-two individuals. These tenements seem to have been the tofts characteristic of agricultural townships.⁶⁵ Grain production certainly was important in South Shields since tenants were ordered not to let their livestock trample the crops in

⁵⁹ M. Kowaleski, 'The Expansion of the South-Western Fisheries in Late Medieval England', *Economic History Review* 53 (2000), 430–1, 444–5.

⁶⁰ M. Bailey, 'Coastal Fishing off South-East Suffolk in the Century after the Black Death', *Proceedings of the Suffolk Institute of Archaeology (& History)* 37 (1990), 109–13.

⁶¹ 'tam batellorum quam cobellorum': DCM, account of the master of Jarrow May to November 1370.

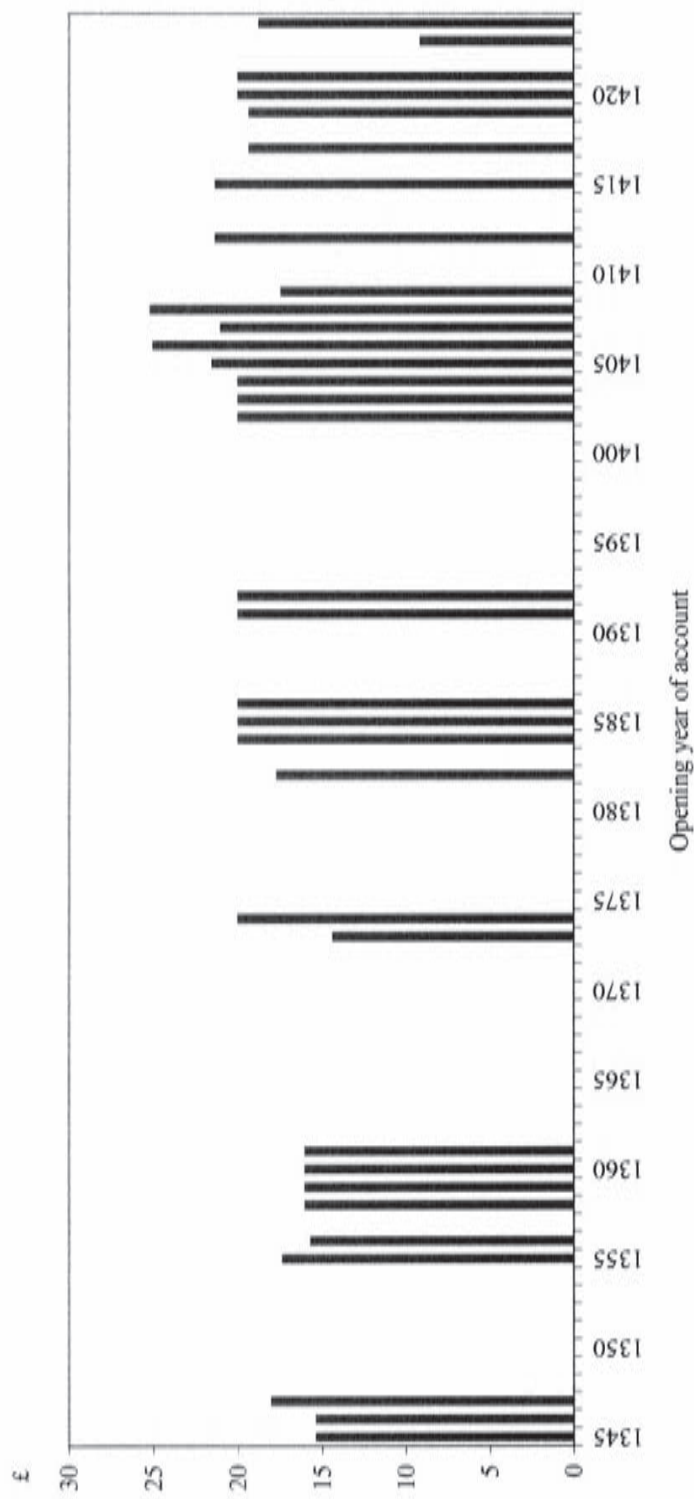
⁶² E.g., DCM, account of the master of Jarrow 1391–2; R. C. Simpson, 'The North East Fishing Industry', *Tyne & Tweed* 39 (1984), 11.

⁶³ Ibid., 16; P. Heath, 'North Sea Fishing in the Fifteenth Century: the Scarborough Fleet', *Northern History* 3 (1968), 58–9; C. M. Fraser and K. Emsley, *Tyneside* (Newton Abbot, 1973), p. 28.

⁶⁴ R. A. Lomas, *North-East England in the Middle Ages* (Edinburgh, 1992), p. 197; M. Threlfall-Holmes, *Monks and Markets* (Oxford, 2005), p. 47.

⁶⁵ Lomas, *North-East England*, pp. 197–8. For the lists of South Shields tenants in 1340–1 and 1396–7

Figure 7. Tithe receipts from South Shields fishermen, 1345–1424



Source and notes: the tithe receipts are taken from the accounts of the masters of Jarrow. They are from tithes which were either sold or leased - it is not always clear which. The gaps are for years from which accounts do not survive, or receipts were not entered for all payment days, or when some fish was consumed by the House.

an area called 'le Hough'.⁶⁶ Even so, fishing must have been a major occupation of the inhabitants of the village, judging by income from fish tithes. In 1355, for example, the fish tithes were leased for £17 6s. 8d. Although it is possible that the rates for the payment of tithes on fish were different to those for grain, such an income from a sold tithe is comparable to that from the garb tithes of a fairly sizable township. In the same year, for example, the tithes from Wallsend and Willington sold jointly for £22.⁶⁷

The timing of the expansion of the fishing industry in South Shields coincides with the period in which arable farming became less profitable. Figure 7 shows that the income received by the masters of Jarrow from the South Shields fish tithes increased in the late fourteenth century. In particular, receipts rose from £15–£20 per annum to £20 and more in the mid-1370s, precisely the time at which grain prices slumped. For the inhabitants of South Shields at least, fishing represented a supplementary source of income in a period of agricultural depression.

South Shields was not the only fishing village on the north-east coast to experience such a boom in the late middle ages. North Shields, across the mouth of the Tyne, and not situated in a parish appropriated to the monks of Durham Priory, seems to have grown even more rapidly. From around one hundred holdings at the end of the thirteenth century, the settlement expanded to over two hundred at the end of the fourteenth.⁶⁸ However, the sea fishing industry was not a major source of income and employment between the Tyne and Tees in the late middle ages. It was smaller in scale in the Durham region than elsewhere on the east coast, both to the north and south. Even allowing for poorer documentation in other villages, it appears there was little sea fishing between the Tyne and Tees outside Hartlepool, Monkwearmouth and South Shields. This was probably because of the region's rugged coastline, where the beaches needed by small medieval fishing boats were few and far between.⁶⁹

A market for sea fish clearly did exist in the late middle ages. The monks of Durham ate a lot of seafood and archaeological evidence suggests fish constituted an important part of the diets of the less well-off too.⁷⁰ Preference for fresh rather than salted fish as living standards rose after the Black Death might have meant this market was relatively buoyant.⁷¹ Rising cash incomes among some groups in society were probably one factor maintaining demand for fresh fish. The location of individual fishing settlements in relation to the market must have been impor-

see: *Durham Cathedral Priory Rentals, 1: Bursar's Rentals*, ed. R. A. Lomas and A. J. Piper (Surtees Society 198, 1986), pp. 38, 81–2.

⁶⁶ E.g. *Halmota*, ed. Longstaffe and Booth, p. 157. 'Le Hough' presumably represented the area still marked on mid-nineteenth-century maps on the west side of the tip of the South Shields peninsula, known as 'Shields Heugh'.

⁶⁷ For fish tithing practice see: Heath, 'Scarborough Fleet', 56.

⁶⁸ Lomas, *North-East England*, p. 192.

⁶⁹ Lomas, *North-East England*, pp. 197–8; Bailey, 'Coastal Fishing', 112. For evidence of Wearmouth fishing see the receipt of 2s. 6d. by the master of Wearmouth in 1383: DCM, account of the master of Wearmouth 1383–4.

⁷⁰ Threlfall-Holmes, *Monks and Markets*, pp. 48–9; Dyer, *Standards of Living*, p. 157; D. Austin, *The Deserted Medieval Village of Thrislington, County Durham: Excavations 1973–74* (Lincoln, 1989), p. 187.

⁷¹ Dyer, *Standards of Living*, pp. 61–2, 159.

tant. South Shields fishermen were able to profit from substantial urban markets in Newcastle and Gateshead. In 1364, for example, William Liulfe and Thomas Scotcs were summoned to appear before the halmote court at South Shields to answer for a porpoise found on the beach. They had taken it to Newcastle and sold it for 12s., depriving the prior of first refusal.⁷² Fishing was presumably less profitable further away from the larger markets.

All in all, it appears that for certain communities in the Tyne Tees region, sea fishing was a realistic and profitable alternative to grain production in the aftermath of the Black Death and with the onset of low grain prices from the 1370s. However, this was not an option open to many people in the region and, even in a fishing village like South Shields, arable husbandry remained important. It appears that, like coal mining, sea fishing represented a lucrative but sporadic by-employment for a small minority of people in the Tyne Tees region.

The fortunes of the riverine fishing industry in the region were much bleaker than those of sea fishing after the Black Death. There were lots of yares on the Tyne and Wear and probably also on the Tees. Lomas used data from the lease of yares belonging to the priory to suggest a sharp decline in river fishing after the Black Death, followed by a slight recovery in the early fifteenth century.⁷³ The pattern of post-Black Death decline is shown by receipts from the tithes of Lumley yare in the parish of Durham St Oswald which were paid to the hostiller. In the 1360s they were worth as much as £1 annually but they then gradually fell off until the fishery ceased to produce salmon and was vacated in the 1420s and 1430s. It is not clear why riverine fishing should have fared worse than sea fishing but it is possible that consumers exercised a preference for sea fish in the period of rising living standards after the Black Death. On the basis of the evidence for the fortunes of riverine fishing, it appears that not all non-agricultural activities represented lucrative alternatives to arable husbandry in the final quarter of the fourteenth century.

Another alternative to arable farming in the region was the manufacture of salt, used for the preservation of meat and fish, as well as for making butter and cheese. In the Tyne Tees region, salt was made by evaporating sea water in salt pans fuelled by coal.⁷⁴ Although the earliest receipt from a salt tithe dates from as late as 1449, the industry was clearly important long before then. A valuation of the bursar's property c. 1230 includes an entry for 'Cowpen with saltworks' and there is a reference to the bursar's purchase of salt at Cowpen Marsh, in Billingham parish, around 1330. In the 1370s and 1380s, the tenants of Cowpen Bewley, situated next to Cowpen Marsh at the mouth of the Tees, were selling salt and making payments in salt to the bursar. By 1396–7, a majority of the tenants in Cowpen Bewley also held salt pans.⁷⁵ There is fifteenth-century evidence for salt production at Monkwearmouth and South Shields but a late-thirteenth-century

⁷² *Halmota*, ed. Longstaffe and Booth, pp. 32, 38.

⁷³ Lomas, *North-East England*, p. 196.

⁷⁴ Fraser and Emsley, *Tyneside*, p. 27; Threlfall-Holmes, *Monks and Markets*, pp. 47, 57; Simpson, 'The North East Fishing Industry', 13; *Extracts from the Account Rolls of the Abbey of Durham*: 2, ed. J. T. Fowler (Surtees Society 100, 1899), p. 314.

⁷⁵ DCM, account of the master of Wearmouth 1449–50; *Priory Rentals*, ed. Lomas and Piper, pp. 17, 93–6; *Durham Account Rolls* 2, ed. Fowler, p. 519; DCM bursar's account 1375–6, printed in *Extracts from the Account Rolls of the Abbey of Durham*: 3, ed. J. T. Fowler (Surtees Society 103, 1901), p.

reference to the purchase of salt in Jarrow suggests the industry existed in these townships earlier.⁷⁶

Rising consumption of meat and fish in the aftermath of the Black Death suggests salt production probably expanded. However, the evidence is too scant to prove such a suggestion and the opposite trend has been observed in salt-producing areas elsewhere.⁷⁷ Whatever the fortunes of the industry as a whole, in some townships like Cowpen Bewley it was an important by-employment, an alternative to arable farming.

In fact, livelihoods derived from a wide variety of further activities beyond the reach of quantitative data. Some villagers produced consumer goods, such as beer. Involvement in brewing might have become more profitable after the Black Death, as is suggested by brewers' refusal to sell their wares to all takers.⁷⁸ There were also clandestine economic activities, income from which was beyond the reach of the tithe collector, but which did not pass entirely undetected in the halmote courts. The sale of the South Shields porpoise mentioned above is one such example. Poaching is another. In the 1370s and 1380s, for example, the men of South Shields were repeatedly ordered not to hunt rabbits in 'le Conyngere', presumably a rabbit warren. Just as there is evidence that landlords used rabbit warrens as a means of boosting sagging income from arable land in the late fourteenth century, so references to rabbit poaching in other parts of the kingdom become more frequent at this time. A similar increase might also have occurred in South Shields which was conveniently close to urban markets for rabbit meat and fur, allowing poachers to dispose profitably of their prey.⁷⁹ The number of place names indicating the location of rabbit warrens recorded in later periods indicates the importance of the rabbit in the Tyne Tees region.⁸⁰ Nor were sales of occasional beached porpoises, or sacks of illegally hunted rabbits, the only clandestine activities to catch the eyes of the lords. Repeated payments of fines for fornication by certain women suggests, for example, that prostitution was not confined to the towns in the late middle ages.⁸¹

For the Tyne Tees region at least, any suggestion that these small-scale and clandestine activities were stepped up after the Black Death must remain speculative. Nevertheless, as shown above, there is evidence of diversification into other better-documented activities. Rising cash income in the 1350s and 1360s is likely to have meant buoyant consumer demand for some products such as coal, leading to the expansion of certain sectors soon after the Black Death. There is also some evidence for increasing diversification around the time of the slump in

583; DCM, bursar's account 1381–2, printed in *Durham Account Rolls* 3, ed. Fowler, p. 592; Lomas, *North-East England*, p. 205.

⁷⁶ *Durham Account Rolls* 2, ed. Fowler, p. 496.

⁷⁷ M. M. Postan, 'The Trade of Medieval Europe: the North', in *The Cambridge Economic History of Europe*, 2: *Trade and Industry in the Middle Ages*, ed. M. M. Postan and E. E. Rich (Cambridge, 1952), p. 200.

⁷⁸ Larson, 'Conflict and Compromise' (unpublished thesis), p. 268.

⁷⁹ E.g. *Halmota*, ed. Longstaffe and Booth, pp. 92, 119, 166, 185; Larson, 'Conflict and Compromise' (unpublished thesis), pp. 271–2; M. Bailey, 'The Rabbit and the Medieval East Anglian Economy', *Agricultural History Review* 36 (1988), 9–12, 16–19.

⁸⁰ I am grateful to Mrs Lisa Liddy for sharing the results of her work on Durham place names with me.

⁸¹ Larson, 'Conflict and Compromise' (unpublished thesis), pp. 239, 241–2; Britnell, *Britain and Ireland*, pp. 145, 360.

grain prices in the mid-1370s as arable farming became less profitable. Pasture farming was probably the most widespread choice and diversification into other non-agricultural activities is likely to have been confined to certain communities at certain times. There are signs that these changes in the rural economy of the region created social tension in the Durham townships during this period.

Larson's work on the priory and bishopric court records demonstrates phases of heightened violence in priory townships after the Black Death and especially from the 1370s. As mentioned above, the beginning of the 1360s saw the introduction of leases in terms of years on the priory estate which had deep effects on village social structure, facilitating the accumulation of holdings and the emergence of wealthy tenants with considerable power. As wealthier tenants tightened their control over the villages, Larson observed an 'increasing visibility of the bylaws' in the court records. In other words, cultivators were ignoring older communal restrictions on agricultural practices and becoming more independent and self-interested. The bursar and tennar repeatedly had to admonish tenants to sow and reap grain at the normal times, not to remove manure from tenements or to sell it, and to pasture their animals in accordance with custom. Land was illegally enclosed. Larson pointed out that this violence and resistance reflects tensions between tenants more than tension between tenants and lords, with villagers sometimes going so far as to form gangs to support one another's interests.⁸²

The timing of these changes is closely linked with the chronology of arable output. The post-Black Death recovery was probably achieved partly as a result of greater independent action by cultivators. It is particularly revealing, however, that the difficulties intensified during the 1370s, just the time when profits from arable farming would have been squeezed by collapsing grain prices. Those continuing to produce grain would have had to adopt ruthlessly efficient, and independent, agricultural practices but would have come into conflict with those switching to pastoral husbandry.

In other words, the new balance between population and resources, along with the shift from arable farming to pastoral and perhaps also non-agricultural activities, created pressures which had not existed before.⁸³ It is interesting that Larson observed much less conflict in townships on the bishopric estate than on priory lands. He attributed the difference to the hands-off approach to landlordship practised by the bishops and their officials after c. 1360, in contrast to the rather meddlesome approach of the monks.⁸⁴ It is also striking that the bishopric townships were concentrated in areas further to the west, away from the more fertile arable land occupied by the priory estates. This suggests conflict was at its most severe in the traditionally arable townships of the east where adjustment to changed economic conditions was sharpest.

The connection between the chronology of arable production and the history of violence in the townships of the Tyne Tees region continued into the early fifteenth century. The violence was at its worst during the final quarter of the

⁸² Larson, 'Conflict and Compromise' (unpublished thesis), pp. 207–12, 237, 245–8, 250, 254–60, 271.

⁸³ These tensions are described by Larson as 'the growing pains of the changes in local society': *Ibid.*, p. 287.

⁸⁴ *Ibid.*, p. 296.

fourteenth century when arable production levels fluctuated sharply and grain prices fell. Larson even suggested a breakdown in social relations in the Durham villages during these years. After the severe turn-of-the-century crisis, however, a sense of stability returned. Figure 2 shows that arable production stabilised, albeit at a low level. Greater permanence emerged at the same time in the social and economic structure of the townships in the region. By c. 1430, when his study ends, Larson considered the basic structures of 'early-modern' Durham to have been in place. Certainly on the priory estate the process of syndication, by which entire townships were let to groups of tenants, represented an end to traditional communal farming in some places.⁸⁵ The suggestion is, therefore, that equilibrium was reached in the early fifteenth century, after the difficult readjustments at the end of the fourteenth. Grain prices remained low but pastoral farming was more profitable.⁸⁶ New structures were in place in the townships.

The end of the post-Black Death boom in arable farming in the 1370s had implications for welfare, revealed by social tension in the villages. Those with larger holdings were in the best position to invest in flocks and herds and possibly, in the case of some townships, in non-agricultural activities. This reallocation of resources would have been more difficult for those controlling smaller acreages whose plots were disturbed by the wandering beasts of wealthier tenants. Yet these difficulties should not be exaggerated. Smallholders continued to be present in the Durham countryside at the end of the fourteenth century and, if diversification into different types of farming was difficult, wage labour was an attractive option.⁸⁷ The Pittington manorial accounts provide a number of examples of demesne employees enjoying increasing wages and renting small holdings in the neighbourhood at the end of the fourteenth century.⁸⁸

All in all, the evidence indicates the scale of the changes undergone by the rural economy of the Tyne Tees region in the decades following the Black Death. The years of booming arable farming were accompanied by rising incomes and consumer demand and changing social and agricultural arrangements in the villages. The subsequent slump in grain prices produced greater changes and more serious conflict. However, the pattern of change was selective. Some communities benefited from local specialisms, the most obvious example being the fishing village of South Shields. Others must have experienced short phases of prosperity brought by mining activities. Groups within communities must also have been affected differently. The slump in grain prices from the 1370s must have led to severe drops in the income of tenant farmers dependent on arable farming but the same period did not bring hardship for all since wages seem to have continued to rise.

⁸⁵ Ibid., p. 327; Lomas, 'Land Tenure', 36–7.

⁸⁶ Pollard, 'Agrarian Crisis of 1438–9', 89–91.

⁸⁷ See, for example, the lists of tenants in Billingham in the rental of 1396–7: *Priory Rentals*, ed. Lomas and Piper, pp. 96–100.

⁸⁸ B. Dodds, 'Workers on the Pittington Demesne in the Late Middle Ages', *Archaeologia Aeliana* 28 (2000), 151–9.

Dearth and disease

In chapter 3 it was argued that the abundance of available land in the region permitted a long phase of demographic expansion during the twelfth and thirteenth centuries which only ended with the crises of the second decade of the fourteenth century. Favourable conditions returned after 1350 since high quality land was available and the decisive end to the threat from the Scots meant economic activities could be pursued without the threat of disaster. There was not, however, a return to the demographic expansion of earlier centuries.

This forms a contrast with evidence from other parts of Europe.⁸⁹ Normandy provides a revealing comparison. Many signs of strong and rapid demographic growth in this region of northern France have been observed in the lull in military activity following the Treaty of Brétigny in 1369. Growth was sustained not only by the absence of destructive invading armies, but also by respite from epidemic disease. Likewise, the early fifteenth century saw the curtailment of growth partly because of Henry V's invasion but also because of a resurgence of high disease-related mortality.⁹⁰

The failure of the population of the Tyne Tees region to recover in the late fourteenth and early fifteenth centuries, despite evidence of rising production and consumption, was common to other parts of England.⁹¹ There has been debate over the causes of demographic stagnation, with some historians emphasising low fertility and others high mortality. These suggestions are discussed in the following chapter in the light of evidence from the fifteenth and early sixteenth centuries. Whatever other factors played a part, however, it is clear that high disease-related mortality was important in the late fourteenth century when there is evidence for repeated outbreaks of pestilence throughout the country.⁹² The Tyne Tees region was not spared and the evidence for the impact of the plague outbreaks of the 1360s has been described above.

The relationship between epidemic disease and demographic change is not straightforward. For example, one potentially significant factor is the age-specific nature of mortality. Chroniclers suggest that young people were particularly vulnerable in the post-Black Death outbreaks of pestilence.⁹³ Work on the lifecycles of monks in the Benedictine community at Durham supports this evidence since survivors of one outbreak seem to have been more likely to survive subsequent epidemics. By implication, the death rate is likely to have been higher among the young who had not experienced an earlier outbreak.⁹⁴ This may be related to evidence for selective immunity to the disease, whatever it was, which

⁸⁹ For a detailed discussion of the evidence for the chronology of changes in output in north-east England and various parts of France and Castile see: B. Dodds, 'Patterns of Decline: Arable Production in England, France and Castile 1370–1450', in *Rural Society and Agriculture in the Late Middle Ages*, ed. R. H. Britnell and B. Dodds (forthcoming).

⁹⁰ G. Bois, *The Crisis of Feudalism: Economy and Society in Eastern Normandy c. 1300–1550* (Cambridge, 1984), pp. 58–9, 125, 300, 308, 310–11, 417.

⁹¹ J. Hatcher, *Plague, Population, and the English Economy, 1348–1530* (London, 1977), pp. 68–9.

⁹² For extracts from the chronicle evidence see *Black Death*, ed. Horrox, pp. 85–92.

⁹³ *Ibid.*, pp. 85–91.

⁹⁴ I am grateful to Mr Alan Piper for sharing the results of work on the lifecycles of the Durham monks.

caused late medieval epidemics.⁹⁵ Age-specific mortality of this kind would have had a long-term demographic impact since the high death rate among children would impair the population's capacity to reproduce in subsequent years.⁹⁶

The tithe evidence offers no direct insight into the complexities of the incidence of disease mortality during the late fourteenth century. However, annual indices of grain output do raise the possibility of a comparison between the incidence of epidemics and fluctuations in grain production. It is clear that high mortality and bad harvests did not always coincide. It has been observed above that the years in which pestilence returned to Durham in the 1360s were not years of particularly low grain production levels. There might have been some connection between outbreaks of pestilence and poor harvests in the 1370s but the evidence is inconsistent. Figure 2 indicates particularly poor harvests in 1374 and 1375, described by the *Anonimale Chronicle* as the years of the fourth pestilence which affected the south in 1374 and the north in 1375.⁹⁷ Apparently much more serious, however, were the outbreaks of 1379–80 when, according to Thomas Walsingham, 'plague broke out in the north country on a scale never seen before'. Court roll evidence from Durham for large numbers of changes of tenancy in these years confirms the scale of the outbreak in the Tyne Tees region. However, figure 2 indicates that the harvests of 1379 and 1380 were not particularly poor, although they were part of a downward trend in output from the very high levels of 1377.⁹⁸ The uncertain connection between years of high mortality and poor harvests continues in the early fifteenth century. For example, 1421 and 1429 appear to have been years of epidemic disease in the region. Although the later of these years did see a poor harvest, grain production in 1421 stood at a relatively high level.⁹⁹

High disease-related mortality was not necessarily associated, in the short term at least, with poor harvests. Nor did low levels of grain production necessarily lead to high mortality in this period. Dyer has drawn a sharp contrast between the impact of bad harvests before and after the 1370s, arguing that the improvement in living standards in the aftermath of the Black Death meant food was sufficiently abundant to prevent mass starvation in the later period.¹⁰⁰ Such a distinction might well have applied in the Tyne Tees region. The chronicle sources discussed in chapter 3 are very clear that in the second decade of the fourteenth century people in the Durham area did starve to death and depopulation must have been exacerbated by the flight of the destitute. Evidence has been presented

⁹⁵ S. K. Cohn, *The Black Death Transformed: Disease and Culture in Early Renaissance Europe* (London, 2002), pp. 191–203, 238.

⁹⁶ The best evidence for age-specific mortality in the late fourteenth century, and its effect on the age structure of the population, is from Italy: D. Herlihy, *Medieval and Renaissance Pistoia: the Social History of an Italian Town, 1207–1430* (New Haven and London, 1967), p. 110; D. Herlihy and C. Klapisch-Zuber, *Tuscans and their Families: a Study of the Florentine Catasto of 1427* (New Haven, 1985), pp. 186–92.

⁹⁷ *Black Death*, ed. Horrox, p. 88.

⁹⁸ *Ibid.*, p. 89; C. Creighton, *A History of Epidemics in Britain*, 2 vols., vol. 1 (Cambridge, 1891), p. 218; Lomas, 'Black Death', 136; Larson, 'Conflict and Compromise' (unpublished thesis), pp. 298–9.

⁹⁹ Creighton, *Epidemics*: 1, p. 221; P. J. P. Goldberg, 'Mortality and Economic Change in the Diocese of York, 1390–1514', *Northern History* 24 (1988), 41.

¹⁰⁰ C. Dyer, 'Did the Peasants Really Starve in Medieval England?' in *Food and Eating in Medieval Europe*, ed. M. Carlin and J. T. Rosenthal (London and Rio Grande, 1998), pp. 67–70.

in this chapter demonstrating that living standards in the North-east improved after the Black Death, as they did elsewhere. On these grounds, it should not necessarily be assumed that years of particularly poor harvests after 1349 saw large numbers of deaths through starvation.

Despite the uncertainty of the connection between high mortality and poor harvests, two episodes stand out in the period considered in this chapter, besides the Black Death itself, in which the two did coincide and appear to be linked. The first began in the final decade of the fourteenth century and lasted until 1402. Both Thomas Walsingham and the continuator of Ranulf Higden's chronicle referred to the distress caused by dearth in 1390 and 1391, the former mentioning deaths through dysentery. The difficulties could have been caused by storms in August in both years which seem to have been particularly severe in the north of England.¹⁰¹ Chroniclers' accounts of dearth coincide with low estimated grain output indices. Figure 2 indicates that there was a run of poor harvests between 1390 and 1402, with truly disastrous levels of grain output in 1401 and 1402.

The evidence for a series of poor harvests is accompanied by that for episodes of high mortality. Higden's continuator described the 1391 outbreak of pestilence as having occurred in the west and the north, and both chroniclers gave astronomical death tolls for the city of York in the same year. The chroniclers' accounts of pestilence at the beginning and end of the 1390s in northern England can be supplemented with other scattered references.¹⁰² More complete evidence of high mortality is provided by Larson's examination of bishopric and priory court roll records. This has revealed a large number of changes of village office holders during the 1390s. The largest number of elections occurred in 1392 but there continued to be a high turnover up to 1397. Although Larson suggested that the crisis had wider implications since some office holders were replaced when still alive, high mortality appears to have been a major cause of the difficulties. This is suggested by the fall in the amount of business transacted in the courts. Likewise, there seems to have been an increase in land transfers and in the amount of land without tenants.¹⁰³

The second episode in which there is a clear coincidence of poor harvests and epidemic disease is the 1430s. Figure 2 shows no other succession of crisis years like that in this most disastrous of decades, although the second decade of the fourteenth century would almost certainly be comparable if more data survived. The crisis of the 1430s in north-east England has been dealt with thoroughly elsewhere. Pollard has observed the effects of bad weather and the evidence for high mortality resulting from epidemic disease at the end of the decade. The tithe

¹⁰¹ *Thomas Walsingham Historia Anglicana: 1*, ed. H. T. Riley (*Rerum Britannicarum Medii Aevi Scriptores* 28, 1863), pp. 203–4; *Polychronicon Ranulphi Higden Monachi Cestrensis: Together with the English Translations of John Trevisa and of an Unknown Writer of the Fifteenth Century: 9*, ed. J. Rawson Lumby and C. Babington (*Rerum Britannicarum Medii Aevi Scriptores* 41, 1886), pp. 240, 242, 258, 260; C. E. Britton, *A Meteorological Chronology to A.D. 1450* (London, 1937), p. 151.

¹⁰² *Historia Anglicana: 1*, ed. Riley, pp. 203–4; *Polychronicon: 9*, ed. Rawson Lumby and Babington, pp. 237, 240, 242, 258–9, 260. DCM, account of the prior of Lytham 1396–7 (A); *The Chartulary of Brinkburn Priory*, ed. W. Page (*Surtees Society* 90, 1893), p. xi; Goldberg, 'Mortality and Economic Change', 41, 44–5; Creighton, *Epidemics: 1*, p. 220.

¹⁰³ Larson, 'Conflict and Compromise' (unpublished thesis), pp. 298–304.

data confirm his conclusions, although they also point to the severity of the crisis early on in the decade: 1432 and 1433 were very bad years.¹⁰⁴

Dyer's argument that better diet cushioned late fourteenth- and fifteenth-century society against the worst effects of dearth does apply to some extent even to a crisis on the scale of that of the 1430s. Grain tithe output data indicate that the production of oats was less seriously affected than that of other cereals, meaning people will have been able to trade down to cheaper foodstuffs. This is shown in table 12 for the township of Aycliffe, from which particularly good grain tithe output data survive. The contrast in Aycliffe in the performance of oats with that of wheat and barley is particularly clear in the crisis years 1432, 1437 and 1438.

Table 12. Aycliffe township grain tithe output, 1423–38 (quarters)

	wheat	barley	oats	legumes
1423	18	10	15	16
1424	12	9	11	20
1427	28 (inc. rye)	13	15	33
1429	18	15	18	18
1432	7	12	22	15
1433	15	11	19	15
1437	7	10	22	3
1438	1	2	12	1

However, Dyer himself suggested that the 1430s were the exception in the relatively famine-free post-Black Death period.¹⁰⁵ Five very bad harvests within the space of only seven years must have had a pretty disastrous effect, especially since the worst year of all came at the end of the decade. In Aycliffe in 1438, output of wheat, barley and legumes was catastrophically low and even the oats yield was poor (table 12). Under these circumstances, even the switch to cheaper grains is unlikely to have been sufficient to sustain the whole population. Such a prolonged series of bad years must have led to the exhaustion of reserves of grain and the consumption of seed corn. Resort to scavenging for roots and berries and the hunting of small mammals might have sustained communities in the short term but the effects of malnutrition are likely to have been felt over a period of several years.

Despite chroniclers' comments on the impact of pestilence, Goldberg suggests that the mortality crisis in 1438, which he observed using the York probate series, 'was probably famine- rather than plague-related'.¹⁰⁶ In fact, the experience of the 1430s might have been comparable with that of the 1390s, which also saw several poor harvests in succession. Both periods seem to have witnessed the conjunction of disease and grain shortage, the effects of which are difficult

¹⁰⁴ Pollard, 'Agrarian Crisis of 1438–9'; B. Dodds, 'Estimating Arable Output Using Durham Priory Tithe Receipts, 1341–1450', *Economic History Review* 57 (2004), 271–5; Dodds, 'Peasants, Landlords and Production', pp. 193–5.

¹⁰⁵ Dyer, *Standards of Living*, p. 271.

¹⁰⁶ Goldberg, 'Mortality and Economic Change', 45–6.

to distinguish. Some causal connection between disease and grain scarcity is possible, like that which existed in seventeenth century Spain.¹⁰⁷ Equally, especially given the evidence for the incidence of disease in years of good harvests, it is possible that dearth and disease operated independently but had more impact when they coincided.

These two episodes of double crisis, when the Tyne Tees region was stalked by both dearth and disease, seem to have had longer-term consequences. During the first decade of the fifteenth century, grain production recovered from its disastrously low levels of 1401 and 1402. However, over the next two decades, output remained at a lower level than in the second half of the fourteenth century, as is clear in figure 2. In fact, the average estimated grain output index for the period 1404–30 is one-fifth lower than that for 1360–90. This suggests a renewed decline in population connected with the high mortality of the turn of the century. Likewise, it is argued in chapter 5 that there were longer-term consequences after the crisis of the 1430s.

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The opening lines of this chapter contrasted the horror of the Black Death with the practicality of people's responses. Both elements are clear in the Durham evidence. In July 1349 tenants of Houghton-le-Spring and Easington refused to take on holdings for fear of the approaching pestilence.¹⁰⁸ Yet, over the coming years, the survivors responded practically and shrewdly by modifying their agricultural practices and dramatically increasing their productivity.

In Durham, like elsewhere in Europe, the Black Death and subsequent outbreaks of pestilence had profound long-term implications for rural economy and society. This is not surprising and has long been at the centre of both *Annaliste* and Anglo-American interpretations of the late middle ages. Many of the features of falling and stagnating population and aggregate output have been observed elsewhere although the Durham tithe evidence does provide a particularly consistent body of data. The discussion of the relationship between disease and dearth, and their short- and long-term effects, confirms the importance of these exogenous factors in the rural economy of the period.

Less expected is the evidence for the dynamic response of the non-seigneurial sector to the opportunities presented by high grain prices and, subsequently, diversification. This response was conditioned partly by regional factors including the end of the threat from the Scots following the Battle of Neville's Cross. Even so, the evidence does have wider implications. Peasants did not respond to the reduction of lords' demands on their surpluses and to the new availability of high quality land by producing only enough to meet their minimum subsistence requirements. Instead, they adjusted the way in which they managed resources in order to meet changing consumption needs and the demands of the market.

¹⁰⁷ V. Pérez Moreda, *Las Crisis de Mortalidad en la España Interior Siglos XVI–XIX* (Madrid, 1980), pp. 294–315.

¹⁰⁸ *Victoria County History, Durham 2*, ed. Page, p. 210.

Non-recovery, c. 1440–1536

Postan caricatured existing views of the fifteenth century thus:

everything which the sixteenth century possessed ... was to be found in the fifteenth century in a degree somewhat smaller than in the sixteenth though somewhat greater than in the fourteenth.¹

He found no such simple progression but described the century as one of sustained agricultural recession, during which the area under cultivation declined.² He later considered the evidence for steadily increasing wages which he thought showed continuing labour shortage and the failure of population levels to increase at least until the 1470s, although he expressed uncertainty over the timing of recovery.³ Blanchard acknowledged the likelihood of sustained agricultural recession and demographic stagnation on the basis of price and wage evidence but pointed out the thinness of the data series. He turned to evidence of enclosure to argue that pressure on arable land did not increase until at least the 1520s.⁴

The features of continued demographic decline and stagnation are observable in the North-east in the fifteenth and early sixteenth centuries. Wage rates paid by the Durham monks remained at stable high levels into the 1540s and prices remained low, confirming the pattern of high real wages observed by Postan.⁵ Although wheat prices in north-east England were higher than those in southern England, table 13 shows that in neither region was there any substantial recovery before the third decade of the sixteenth century.⁶ Evidence from landlord estates in the region indicates agricultural depression. Lomas argued that the 'nadir' of the fortunes of Durham Priory's estate was reached in the 1440s with some recovery in tithe, mill and rental income by the final decade of the century.⁷ Newman's more detailed analysis of the income of the bishops of Durham from Northallerton, however, suggests little recovery before the 1530s or 1540s. Arrears from the estate spiralled in the 1490s, fell slightly around the

¹ M. M. Postan, 'The Fifteenth Century', *Economic History Review* 9 (1939), 160.

² *Ibid.*, 161–6.

³ M. M. Postan, 'Some Economic Evidence of Declining Population in the Later Middle Ages', *Economic History Review* 2 (1950).

⁴ I. S. W. Blanchard, 'Population Change, Enclosure, and the Early Tudor Economy', *Economic History Review* 23 (1970).

⁵ C. M. Newman, 'Work and Wages at Durham Priory and its Estates, 1494–1519', *Continuity and Change* 16 (2001); D. Woodward, *Men at Work: Labourers and Building Craftsmen in the Towns of Northern England, 1450–1750* (Cambridge, 1995), pp. 171–2, 214, 259–60.

⁶ Over the short term there were greater variations in price movements between the two regions: M. Threlfall-Holmes, *Monks and Markets* (Oxford, 2005), pp. 168–71.

⁷ R. A. Lomas, 'The Black Death in County Durham', *Journal of Medieval History* 15 (1989), 138–9.

turn of the century, and then increased again in the late 1510s and late 1520s.⁸ Pollard's examination of the evidence of rents from the North-east led to similar conclusions.⁹

Table 13. Decennial average wheat prices in north-east and southern England, 1400–1519 (s. per qu.)

Decade	North-east England (Beveridge)	Southern England (Thorold Rogers)
1400–9	7.47	5.79
1410–9	6.34	5.45
1420–9	6.03	5.43
1430–9	9.02	7.12
1440–9	5.03	4.83
1450–9	5.57	5.49
1460–9	6.53	5.42
1470–9	5.79	5.35
1480–9	7.11	6.40
1490–9	5.37	4.94
1500–9	6.05	5.66
1510–9	5.95	6.18

Sources: southern English prices from J. T. Thorold Rogers, *A History of Agriculture and Prices in England from the Year after the Oxford Parliament 1259, to the Commencement of the Continental War, 1793* vol. 4 (Oxford, 1882). The north-east England series was extracted from the Durham Priory records by Lord Beveridge's team: Boxes C1, C2, C3, C4, C5, C6, C7, C8(i) and C8(ii), The Beveridge Price History Archive (British Library of Political and Economic Science).

Estimated arable output indices based on tithe data provide more direct evidence for the stagnation of production over the course of the fifteenth century. Care is needed in the interpretation of figure 2, particularly for the period after 1450, because of changing methods of tithe administration by the monks. It appears that it became increasingly common for tithes to be leased for periods of more than one year. Unfortunately, the accounts rarely state whether a tithe was sold annually or for several years, meaning it is not clear whether two identical consecutive receipts reflect similar price and output levels in both years or fixed payments made according to a prior leasing agreement. However, there was far less fluctuation in receipts from tithes sold for cash from individual townships after 1450 than before. For example, in the case of the township of Shincliffe in the parish of Durham St Oswald, prior to 1450 fewer than half the cash sums received for tithes were the same as the receipt from the previous year. After 1450 over two-thirds were identical. In the case of Aycliffe, the figures are 44 per cent and 89 per cent. It is likely that the increased resort to tithe leasing during

⁸ C. M. Newman, *Late Medieval Northallerton: a Small Market Town and its Hinterland, c. 1470–1540* (Stamford, 1999), pp. 81–91.

⁹ A. J. Pollard, *North-Eastern England During the Wars of the Roses: Lay Society, War, and Politics 1450–1500* (Oxford, 1990), p. 79.

the fifteenth century reflects the monks' changing managerial policies.¹⁰ The practice of leasing tithes for longer periods considerably limits the usefulness of the tithe series for the examination of annual fluctuations in output. However, periodic changes in the amount for which tithes were leased or sold do indicate a continued relationship between tithe sale price and production levels. Moreover, the consistency with which tithes from Billingham parish were kept in hand in this period means annual output data survive in the form of grain tithe output receipts.

Despite the work of Postan and others, the century after c. 1440 has been less thoroughly studied than earlier periods. The outlines of economic and demographic trends have been discerned but shorter-term cycles are less clearly understood. On the basis of the arable output indicators, this chapter considers a series of subperiods. The first comprises the years of depression in the middle decades of the fifteenth century. There followed a recovery of arable production which lasted until the 1480s, a decade of severe crisis. The period from 1490 was one of more complex and often ambiguous trends but signs of renewed growth are limited.

There are three strands to the analysis of the subperiods. The first is changing arable output for which the tithe evidence provides data. Linked to this are the fortunes of other sectors of the rural economy, for which evidence is less substantial. No direct evidence survives at all for the third strand, that of demographic change, but some suggestions can be made on the basis of economic indicators and records of mortality. Following the detailed examination of these strands for each subperiod, the final section of the chapter will consider the overall picture. The reasons for the absence of sustained recovery in grain production will be examined using a comparison of the Durham tithe evidence with that of series compiled from continental Europe.

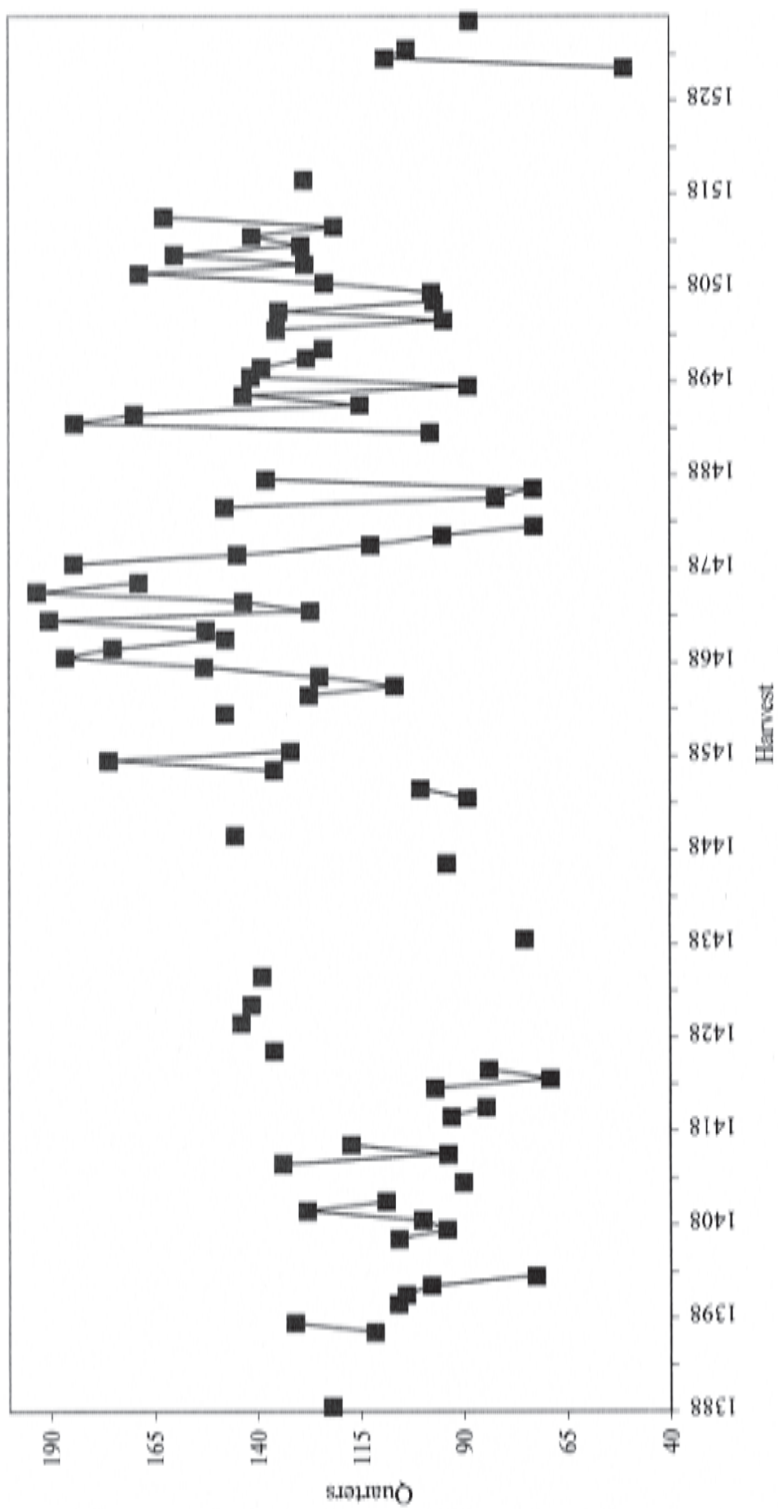
Mid-fifteenth-century depression

The severe crisis of the 1430s was followed by depression in the arable sector. The estimated aggregate output data suggest the 1440s began with two years of relatively high grain output but over the next fifteen years or so output was low, fluctuating around levels comparable with those of the 1390s (figure 2). Unfortunately, evidence from tithes received as grain does little to confirm this picture because of the scantness of surviving data (figure 8). In this section, it is argued that the problems of the mid-fifteenth century were closely linked to the crises of the 1430s in north-east England. The non-arable sectors of the rural economy were affected too, though pastoral farming seems to have been more prosperous than elsewhere in the country.

The mid-fifteenth-century depression arrived early in north-east England. Elsewhere the rural economy seems to have suffered most after mid-century,

¹⁰ For the monks' fifteenth-century estate management policies see *Durham Cathedral Priory Rentals, 1: Bursar's Rentals*, ed. R. A. Lomas and A. J. Piper (Surtees Society 198, 1986), p. 9. For changing policies regarding tithe income see B. Dodds, 'Managing Tithes in the Late Middle Ages', *Agricultural History Review* 53 (2005), 132–3.

Figure 8. Total grain tithe output (unweighted) from Billington township, 1388–1536



coinciding with the sharp recession in overseas trade.¹¹ However, the timing of the two related phenomena was not always so closely linked and in the North-east the severity of the 1430s crisis seems to have been decisive.¹² Mortality resulting from the combination of famines and epidemics at the end of the 1430s seems to have reduced demand for grain.¹³ Slack demand for land is clear from the terrible difficulties experienced by landlords in the region. In September 1446, William Ebchester, prior of Durham, thought the financial state of his house very precarious.¹⁴ During the 1430s and 1440s, the priors of Finchale suffered the worst difficulties in rent collection, and the worst deficit, in the entire period from which their accounting material survives and there was little improvement in the 1450s and 1460s.¹⁵ The situation was also difficult on the bishopric estate. Arrears accumulated and rental payments made to the bishop's receiver-general reached their lowest level for the whole century in 1459–60.¹⁶

Evidence from elsewhere in the country suggests it was difficult to offset low grain prices by shifting resources to other economic activities in the mid-fifteenth century. The situation was desperate for pastoral farmers too. Mortality during the 1430s affected not only humans but livestock also. Harsh winters meant sheep on the Winchester bishopric estate died, possibly because of feeding difficulties when there was snow on the ground, and perhaps through increased susceptibility to disease. Flocks on manors in south-east England seem to have suffered particularly badly too. Even if flocks escaped the ravages of disease and lack of nourishment, their profitability was reduced by falling wool prices in the 1440s and 1450s.¹⁷

However, the pastoral sector in the North-east does not seem to have fared quite so badly as elsewhere. The difficulties of the 1430s affected the arable sector much worse than the pastoral.¹⁸ Whereas England's total wool export levels were depressed during the 1430s and 1440s by comparison with the first three decades of the fifteenth century, Newcastle export levels were relatively buoyant (figure 9). The fall in national wool exports in the 1430s seems to have been a result of the Flemish ban on English wool in response to the protectionist

¹¹ C. Dyer, *Lords and Peasants in a Changing Society: the Estates of the Bishopric of Worcester, 680–1540* (Cambridge, 1980), p. 188; J. Hatcher, *Rural Economy and Society in the Duchy of Cornwall, 1300–1500* (Cambridge, 1970), p. 164.

¹² J. Hatcher, 'The Great Slump of the Mid-Fifteenth Century', in *Progress and Problems in Medieval England*, ed. J. Hatcher and R. H. Britnell (Cambridge, 1996), pp. 244–6; A. J. Pollard, 'The North-Eastern Economy and the Agrarian Crisis of 1438–40', *Northern History* 25 (1989), 102–3.

¹³ P. J. P. Goldberg, 'Mortality and Economic Change in the Diocese of York, 1390–1514', *Northern History* 24 (1988), 45. See above, pp. 98–100, for a discussion of the causes of dearth and mortality during the 1430s.

¹⁴ R. B. Dobson, *Durham Priory, 1400–1450* (Cambridge, 1973), p. 253.

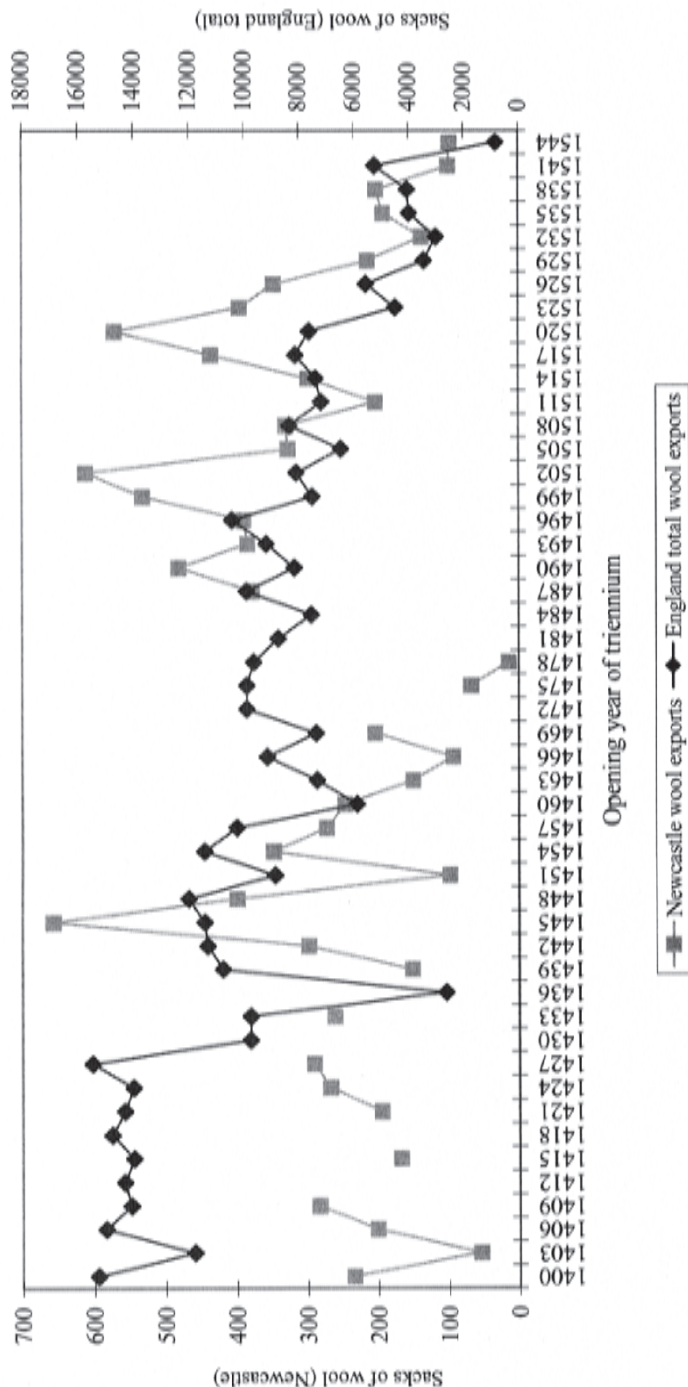
¹⁵ B. Dodds, 'Peasants, Landlords and Production between the Tyne and Tees, 1349–1450', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), p. 193.

¹⁶ Pollard, *North-Eastern England*, p. 53.

¹⁷ Hatcher, 'Great Slump', pp. 243–6; M. J. Stephenson, 'Wool Yields in the Medieval Economy', *Economic History Review* 41 (1988), 383–4; M. Mate, 'Pastoral Farming in South-East England in the Fifteenth Century', *Economic History Review* 40 (1987), 525–6; T. H. Lloyd, *The Movement of Wool Prices in Medieval England* (London, 1973), p. 43.

¹⁸ Pollard, 'Agrarian Crisis of 1438–9', 99–100.

Figure 9. Wool exports from Newcastle and England (triennial averages), 1400–1547



Source: data prepared by Dr Margaret Bonney and drawn from E. M. Carus-Wilson and O. Coleman, *England's Export Trade, 1275-1547* (Oxford, 1963). Available at the European State Finance Database as filename 'unmb/eim001.txt' at <http://www.le.ac.uk/hi/bo/ESFDB/MMB/mmb.html> (viewed Nov. 2006). Caution is needed in placing too much weight on annual changes in export levels, especially when comparing one place with another, due to slight variation in the period covered by the accounts: Carus-Wilson and Coleman, *England's Export Trade*.

measures of the Calais Staple.¹⁹ It appears that wool exporters from the North-east might have been able to avoid some of these restrictions.

Of course, possible changes in the production-export ratio mean wool export levels cannot be used as a direct indicator of the buoyancy of the pastoral sector. However, the possibility that pastoral farming was not so severely affected in the 1430s and 1440s in the North-east as elsewhere is also suggested by seigneurial evidence. The Finchale priors, for example, seem to have achieved some success in using sheep-farming to offset decline in other sources of income. In the early 1440s, the cell's manor at Wingate had to be brought in hand, perhaps reflecting difficulties in finding willing tenants. The final lease receipt in 1444–5 was £8, some or all of which might not have been paid. When in hand, however, the receipts from the manor rose. Between 1446–7 and 1449–50 the manor yielded over £17 after the deduction of expenses. Sheep-farming seems to have been a major contributor to this modest prosperity in the midst of a depression in arable farming. In the years for which receipts are itemised, over half the manor's income came from livestock and livestock products. Table 14 demonstrates the expansion of Finchale's sheep flocks (not just those at Wingate) during the late 1440s, although it appears that this took place partly at the expense of the cattle herds.²⁰

Table 14. Stock kept at Wingate, Finchale and Cocken, 1446–50

	sheep	lambs	cows
1446–7	414	100	73
1447–8	492	300	63
1448–9	480	190	54
1449–50	510	260	44

The use of the long hundred is assumed because of the use of the five score notation in the same accounts.

Source: *The Priory of Finchale: the Charters of Endowment, Inventories and Account Rolls*, ed. J. Raine (Surtees Society 6, 1837), pp. ccxlix, ccliii, cclvi–cclvii, cclxi.

The profitability of the manor at Wingate, and the expansion of sheep flocks during the second half of the 1440s, suggest a successful response to the relative buoyancy of the export trade in wool from the region in the same decade. These data come from seigneurial flocks but certain non-seigneurial producers might also have been able to profit from sheep-farming. However, the buoyancy of this part of the pastoral sector should not be exaggerated. The profitability of seigneurial enterprises is difficult to measure and the data contained in the accounts of the priors of Finchale might conceal other costs. Evidence from other enterprises suggests the fortunes of sheep-farming were not always so rosy. On Durham Priory's pastoral operation at Saltholme, expansion during the 1440s still did not

¹⁹ G. Harriss, *Shaping the Nation: England, 1360–1461* (Oxford, 2005), pp. 261–2.

²⁰ *The Priory of Finchale: the Charters of Endowment, Inventories and Account Rolls*, ed. J. Raine (Surtees Society 6, 1837), pp. ccxlii–cclxi, cclxv–cclxxxii.

bring sheep flocks back up to pre-1430s levels.²¹ The most that can be claimed for sheep-farming during the 1440s and 1450s is that it fared a little better than the arable sector. By comparison with early fifteenth-century standards it might not have looked so buoyant.

Table 14 hints that the fortunes of cattle-farming were bleaker than those of sheep-farming in the 1430s and 1440s. This is confirmed by a range of other evidence from the region: the mini-boom in cattle-farming in the early fifteenth century seems to have collapsed from the 1440s.²² In the absence of a substantial export market, this might have been the result of the collapse of local demand, as is suggested by Pollard's evidence for the closure of twelve butchers' stalls outside the castle in Barnard Castle.²³ The poorer quality pasture land of the Tyne Tees region did not permit the profitable intensive rearing of cattle throughout the fifteenth century, as it did on the rich pastures of the Forest of Arden, for example.²⁴

The fortunes of non-agricultural sectors in which non-seigneurial producers were involved are even less clear. As described in the previous chapter, although demand for coal expanded during the fourteenth century, the industry remained small-scale in all but a handful of townships until much later in the sixteenth century. Given the difficulties landlords and tenants alike were experiencing in the 1440s and 1450s, it is hardly likely that demand for coal increased any further.²⁵ The fortunes of coal mining in the Tyne Tees region in the mid-fifteenth century were patchy, with some pits remaining productive and others being brought in hand or closed altogether.²⁶

This picture is confirmed by a close examination of the income from the mines of the Finchale priors. Their pit at Coxhoe produced the remarkable sum of £54 in 1429–30, although it is not clear whether this was a lease payment or the product of direct management. However, over the next three years, receipts from this mine fell sharply until no receipt at all was entered for 1433–4.²⁷ Given the climate of economic difficulties, demand is likely to have fallen. In 1435–6, for example, the prior received nothing from the coals of 'Moorhousefield' after expenses 'because they remain at the pit not yet sold'.²⁸ In fact, between 1433–4 and the end of the 1440s, the Finchale priors' receipts from mines were exceptionally low. In 1442–3 £26 5s. 9d. was spent on an aqueduct for the mine at Baxtanford but only three years later the same pit was unoccupied.²⁹ The Finchale monks seem to have struck lucky soon afterwards, however, since from the 1450s

²¹ Dodds, 'Peasants, Landlords and Production', p. 192.

²² Pollard, 'Agrarian Crisis of 1438–9', 91–2; Dobson, *Durham Priory*, p. 277; Hatcher, 'Great Slump', pp. 252–3.

²³ Pollard, 'Agrarian Crisis of 1438–9', 102.

²⁴ A. Watkins, 'Cattle Grazing in the Forest of Arden in the Later Middle Ages', *Agricultural History Review* 37 (1989).

²⁵ For comments on consumption in the mid-fifteenth-century recession, see Hatcher, 'Great Slump', pp. 265–6.

²⁶ J. Hatcher, *The History of the British Coal Industry 1: Before 1700: Towards the Age of Coal* (Oxford, 1993), pp. 29, 77.

²⁷ *Priory of Finchale*, ed. Raine, pp. ccii–ccxii.

²⁸ 'quia remanent ad puteum nondum venditi': *Ibid.*, p. ccxviii.

²⁹ *Ibid.*, pp. ccxxxviii, ccxlv.

receipts picked up again because of a mine at 'Moorhouseclose' which produced unusually reliable receipts, often in excess of £10 per annum.³⁰

Rather than providing a chronology for the fortunes of coal mining in the region in the mid-fifteenth century, the evidence from the Finchale priors' accounts is a reminder of the sporadic existence of small pits in the period. Pollard has suggested that the productive pits of the mid-fifteenth century were those producing for 'seigneurial consumption', and that it was not until later in the century that output for the market revived.³¹ As was described for the late fourteenth century, coal mining during this period is unlikely to have provided a lucrative alternative to arable cultivation for either landlords or labourers in all but a few centres in the region.

There is no evidence that the profits from the fishing industry dropped in the early years of the fifteenth century as they did in some other parts of England.³² Comparison of the bursars' rentals of 1396–7 and 1495–6 shows that South Shields continued to expand over the course of the fifteenth century with an increase in the number of tenants and the average rent.³³ Unfortunately, the series of South Shields fish tithe payments described in the previous chapter ceases to be useful from the early 1430s because of the practice of combining the fish tithes with receipts from altarage and mortuaries in the account rolls.³⁴ Despite the prosperity of one fishing centre, there is no reason to suggest fishing represented a viable alternative to agricultural production for more than a very small minority of people between Tyne and Tees during the fifteenth century.³⁵

The problems of the rural economy between the Tyne and Tees in the 1440s and 1450s were serious. Recession arrived early in the region by comparison with elsewhere in England because of the bad harvests and high mortality of the 1430s. Unlike after the Black Death, there was no surge in per capita consumption or rise in grain prices during the 1440s and 1450s which could fuel a recovery in land occupation and arable output. Nor did activities outside arable farming offer much respite. Price data for agricultural outputs other than grain have yet to be collected from the North-east but data from elsewhere suggest prices of livestock and livestock products were low too.³⁶ The early-fifteenth-century boom in cattle-farming seems to have ended and profitable mining and fishing industries were confined to certain townships. Only sheep-farming seems to have offered a flicker of hope, benefiting from the buoyancy of export levels from the region. Even here, however, output and prices were low by comparison with earlier periods. Profits may have been possible in certain centres, such as the manor of Wingate, but the extent to which farmers throughout the region were able to maintain their incomes must be doubted in a period of low prices and proliferating vacancies on the land.

³⁰ Ibid., p. cclxvi ff.

³¹ Pollard, *North-Eastern England*, pp. 75–6.

³² See above, p. 90.

³³ R. A. Lomas, *North-East England in the Middle Ages* (Edinburgh, 1992), p. 198.

³⁴ E.g. DCM, account of the master of Jarrow 1432–3.

³⁵ For a discussion of the role of fishing in the rural economy of the Tyne Tees region see above pp. 89–92.

³⁶ D. L. Farmer, 'Marketing the Produce of the Countryside, 1200–1500', in *The Agrarian History of England and Wales, 3: 1348–1500*, ed. E. Miller (Cambridge, 1991), pp. 510–11, 514–15. Decennial indices are given in Hatcher, 'Great Slump', p. 243.

Under these conditions, even the wealthier tenants must have struggled to keep afloat. Lomas's work on south-east Durham offers some valuable clues. It is clear that the hold of wealthy tenants over village land strengthened during this period. A few tenants with cottages and odd acres remained at the end of the fifteenth century, but they were few in number by comparison with the end of the fourteenth. It is also apparent, however, that the wealthy families of c. 1400 were not the same as those in c. 1500. A number of factors probably explain this discontinuity but the rising tide of low prices and high labour costs must have left some wealthier tenant farmers out of their depth.³⁷ Those with smaller holdings must have found themselves in a precarious position too. Although the fifteenth century saw continued high wage levels, it is hard to imagine that demand for labour did not slacken off, temporarily at least, when so many tenants were vacating holdings or failing to pay rents.³⁸

Recovery and renewed crisis

The chronology of economic change after the mid-fifteenth-century recession is not well established. On the basis of the Durham Priory tithe data, it appears that recovery began in the late 1450s and was sustained until the crisis in arable farming of the 1480s. It is suggested in this section that rising grain output between the Tyne and Tees reflects a measure of demographic recovery in the region although evidence from other sectors of the economy reveals little sign of recovery in the 1460s and 1470s. Any replacement of numbers which did occur seems to have been reversed in the 1480s.

The late 1450s, 1460s and 1470s saw partial recovery in arable production in north-east England. Although still less than half pre-Black Death levels, by the mid-1470s grain output was approaching the levels of the early fifteenth century (figure 2). In some townships, production levels might have been substantially higher by the 1470s than in the early fifteenth century, such as Billingham from which grain tithe output data survive (figure 8). Landlords in the Tyne Tees region experienced a lessening of rent collection difficulties. The bishopric receiver-general accounts show some improvement from the nadir of 1459–60, although income was not restored to pre-1438–9 levels.³⁹ From the 1470s, if not earlier, the priors of Finchale enjoyed lower rental arrears and entered smaller allowances for vacant holdings and those not yielding full rents.⁴⁰

Other sectors of the economy fared worse, however, and were in the throes of serious depression. From the 1440s England was increasingly excluded from the Baltic, culminating in the English failure to recover their presence in the sea in the war of 1468–74. As a result, English overseas trade became focussed on the Low Countries and London enjoyed the major advantage of proximity over the more northerly ports. This led to severe decline in York, and in the wool and textile industries of north-west Yorkshire, countered by an expansion in West Yorkshire

³⁷ T. Lomas, 'Land and People in South-East Durham in the Later Middle Ages' (unpublished Ph.D. thesis, Teesside Polytechnic, 1976), pp. 158–68.

³⁸ Hatcher, 'Great Slump', pp. 262–3.

³⁹ Pollard, *North-Eastern England*, pp. 53–4.

⁴⁰ *Priory of Finchale*, ed. Raine, pp. cclxviii–ccclii.

which was closer to London. Other north-eastern towns, including Newcastle, suffered too.⁴¹ The realignment of the east coast trade had a serious impact on wool exports from the North-east. The wool export data shown in figure 9 suggest Newcastle's involvement in the overseas trade plummeted during the 1460s and 1470s. Any possible counter-cyclical buoyancy of sheep-farming in the region during the 1440s and 1450s was well and truly over. Nor is there any evidence that the non-agricultural sectors fared any better. There were pockets of prosperity, such as Finchale Priory's lucrative mine at 'Moorhouseclose' mentioned above and the iron mining which began in Muggleswick in the 1450s, but these were few and far between.⁴²

At a time when the grip of recession was tightest in some areas further south, and when the fortunes of other sectors of the north-eastern economy were bleak, the recovery in grain output must have been sustained by increasing internal demand in the region. This may be reflected by the sharper increase in prices in north-east England between 1450 and 1469 than in areas further south (table 13). After the high mortality of the 1430s, it is possible that there was a period of modest population increase, permitted perhaps by the relative absence of severe epidemic disease.⁴³

Recovery in the arable sector, possibly sustained by demographic growth in the townships of the region, was curtailed by renewed crisis in the 1480s. Estimated aggregate output indices for the harvests of 1481 and 1482 are only just over half their mean level of the previous ten years for which indices can be calculated (figure 2). The index for 1482 is the second lowest of the entire series from 1270 to 1536, and is only a little higher than the nadir in 1438. Grain tithe receipts from Billingham township were also very low in 1481–2 (figure 8). Although the estimated aggregate grain output indices do not show a return of dearth in the second half of the 1480s, the grain tithe output data suggest that the harvests were very bad in 1485 and 1486 in Billingham (figures 2 and 8).

The worst years of the 1480s were almost as bad as those of the 1430s but it is hard to determine whether there was the same concentration of very bad harvests in the two decades. Mean aggregate estimated output indices are slightly lower for the later decade but this may reflect the lack of data for 1483 and 1489. However, such detailed comparison of individual indices puts too much weight on the method of deflating receipts from tithes sold for cash for a period in which longer leases of tithes reduce the sensitivity of the data to annual crises. If price data are used more directly and deviation from the 31-year moving average calculated, following Hoskins' method, then the difficulties of the 1480s appear rather less severe than those of the 1430s. Whilst four harvests fall into Hoskins' dearth category during the 1430s (1432, 1435, 1437 and 1438), there were only two comparably bad harvests during the 1480s (1481, 1482).⁴⁴

⁴¹ Pollard, *North-Eastern England*, pp. 71–3; A. Butcher, 'Rent, Population and Economic Change in Late-Medieval Newcastle', *Northern History* 14 (1978), 71–2.

⁴² R. A. Lomas, 'Durham Cathedral Priory as a Landowner and a Landlord, 1290–1540' (unpublished Ph.D. thesis, University of Durham, 1973), pp. 136–7.

⁴³ Goldberg, 'Mortality and Economic Change', 53.

⁴⁴ W. G. Hoskins, 'Harvest Fluctuations and English Economic History, 1480–1619', *Agricultural History Review* 12 (1964), 39.

During the 1460s and 1470s, years of high mortality were not associated with poor harvests. Goldberg's York probate evidence suggests mortality peaks in 1467, 1471–2 and 1474. Neither the estimated output indices in figure 2, nor the direct Billingham tithe data in figure 8, suggest that these were years of low output. Moreover, they occurred during the period of recovery in the arable sector. However, like in the 1390s and 1430s as described in the previous chapter, poor harvests coincided with outbreaks of disease during the 1480s. The high mortality during the 1480s might have been the result of the arrival of a new disease. 1485 was the year of the first outbreak of the infamous and mysterious disease called the 'English sweat'. However, Slack has used more detailed evidence available for a later outbreak in 1551 to suggest that, alarming though the rapid effects of the disease were, it passed through communities too quickly to cause very high mortality levels. Clearly, the earlier outbreaks could have been different but Slack considers that the coincidence of the 'sweat' with plague in the mid-1480s was more important in causing high mortality in that decade. What is more, Goldberg's mortality peak in York occurs in 1483, before the arrival of the sweat and following the very poor harvests of 1481 and 1482. It is known that York was affected by plague in 1485 and so it seems reasonable to suggest the Tyne Tees region also suffered.⁴⁵

The suggestion that the 1480s saw high mortality in north-east England because of disease does not fit very well with detailed work on monastic communities in the south. Work on the Benedictine houses at Canterbury and Westminster reveals an earlier upturn in mortality, around the middle of the fifteenth century. In Christ Church Canterbury, the crude death rate in 1485 was lower than in 1457 and 1471. In Westminster, 1483 and 1485 were years of unusually high death rates but not of crisis mortality; the death rate amongst the monks was much higher in 1420 and 1464. However, as the authors of these studies admit, mortality patterns in monastic communities are not necessarily the same as in the wider population.⁴⁶ It is likely that evidence from monastic communities enjoying an aristocratic diet would under represent wider mortality resulting from the combined effects of disease and food shortage. The latter would impact on the poorer sections of society severely and on monks much less so. Moreover, regional variations are also important. The incidence of disease in the fifteenth century followed complex patterns; a number of diseases were present and affected different places at different times.⁴⁷

The economic situation for the inhabitants of the townships of the Tyne Tees region from around 1460 probably represented an improvement on the difficult years of the 1430s, 1440s and early 1450s. There seems to have been a positive response to rising grain prices from the late 1450s into the 1470s. Various types of landholder must have benefited from this phase of recovery, as is indicated by

⁴⁵ Goldberg, 'Mortality and Economic Change', 41, 46–7; Pollard, *North-Eastern England*, p. 55; P. Slack, *The Impact of Plague in Tudor and Stuart England* (London, 1985), pp. 70–1.

⁴⁶ J. Hatcher, 'Mortality in the Fifteenth Century: Some New Evidence', *Economic History Review* 39 (1986), 28–9, 33–6; B. F. Harvey, *Living and Dying in England, 1100–1540: the Monastic Experience* (Oxford, 1993), pp. 123–4, 127–9, 142–4.

⁴⁷ J. M. W. Bean, 'Plague, Population and Economic Decline in England in the Later Middle Ages', *Economic History Review* 15 (1962–3), 430. For exceptionally detailed evidence on the diseases present in Canterbury see Hatcher, 'Mortality in the Fifteenth Century', 31.

landlords' increasing success in collecting rent payments. Continuing depression in the pastoral and non-agricultural sectors might have been offset by investment in apparently more profitable grain production. Crisis returned, however, during the 1480s. Like the earlier periods described in the previous chapter in which poor harvests and high disease-related mortality coincided, the difficulties of the 1480s had a long-term effect. The upward trends in grain production and perhaps population observed in the 1460s and 1470s were not renewed.

Transformation?

There do not appear to have been any phases of sustained arable recovery between the 1490s and the end of the tithe series in 1536. In this section it is argued that there were swings in the trend of arable output during these years, possibly culminating in further serious crisis in the late 1520s and 1530s. Some relationship with high disease-related mortality is possible, especially between the middle of the first decade of the sixteenth century and the early 1520s. However, there are signs of recovery in non-arable sectors of the rural economy. This raises the possibility that the regional economy underwent a transformation, with specialisation in non-arable production and increasing levels of grain imports to sustain a growing population. This hypothesis is tested here using data from imports of grain into Newcastle.

The fortunes of arable farming fluctuated from 1490. There were some reasonably good years around the turn of the century, and perhaps a slight upward trend in the first and second decades of the sixteenth century, but the levels of the 1460s and 1470s were not regularly attained (figure 2). A similar pattern is shown by the Billingham grain tithe output data, although 1509, 1511 and 1515 seem to have been particularly good years in this township (figure 8), despite not showing up as such in figure 2.

It appears that the slight upturn of the early sixteenth century did not last. The long series of priory office holder accounts effectively ends before 1520 but receipts from tithes sold for cash in 1536 suggest that, even by the middle of the fourth decade of the sixteenth century, there had been no sustained recovery. These data can be supplemented by grain tithe output data from earlier in the same decade, shown in tables 15 and 16.⁴⁸ As is so often the case, good runs of data are only available from Billingham parish but they do suggest a fall in production of approximately 40 per cent between the 1510s and the 1530s.

⁴⁸ The data from the second decade of the fifteenth century are taken from the bursars' accounts. There are no surviving complete accounts between 1519–20 and 1536–7 but grain tithe receipts were entered in DCM, bursar's book K and printed in *The Durham Household Book: Or, the Accounts of the Bursar of the Monastery of Durham. From Pentecost 1530 to Pentecost 1534*, ed. J. Raine (Surtees Society 18, 1844).

Table 15. Grain tithe output from Billingham township, 1510–36 (nearest quarter)

	wheat, rye	barley	oats, legumes	total
1510	35	50	44	129
1511	34	56	70	160
1512	31	56	43	130
1513	41	50	50	141
1514	45	40	36	121
1515	39	68	56	163
1519	42	49	38	129
1531	14	10	18	42
1532	39	43	28	110
1533	38*	47	18	103
1536	22	38	16	76

* Grain type not specified, assumed to be wheat.

Table 16. Grain tithe output from Cowpen Bewley township in Billingham parish, 1510–36 (nearest quarter)

	wheat, rye	barley	oats, legumes	total
1510	22	11	9	42
1511	25	11	11	47
1512	31	19	11	61
1513	28	14	18	60
1514	23	10	13	46
1515	37	21	11	69
1519	26	21	4	51
1531	11	6	6	11
1532	15	14	7	36
1533	30	17	*	47
1536	12	15	8	35

* No oats or legumes quantity given.

This chronology of arable output can be corroborated, to some extent, using evidence of demand for land elsewhere in north-east England. Difficulties in rent collection in the North-east at the very end of the fifteenth century have been observed by Newman in her study of the bishop's receivers' accounts for Allertonshire. Overall there was a slight fall in net income between 1492–3 and 1539–40. Arrears were particularly high in the 1490s, which Newman attributed partly to the lingering effects of the 1480s difficulties. Although these arrears were written off, new ones were accumulated in 1506–7 and the difficulties persisted during the 1510s. They were followed in Allertonshire by a measure of recovery in the early 1520s but this was short-lived and, by the end of the decade, arrears

were accumulating once more. Only from the end of the 1530s did arrears begin to fall again.⁴⁹ Newman's chronology of development in Allertonshire supports the evidence of crisis in the early 1530s suggested by tables 15 and 16 above.

The evidence for the role of high mortality in the muted recovery of the turn of the century and possible renewed crisis around 1530 is uncertain, and sometimes conflicting. Newman considered that an outbreak of pestilence in 1493–4 contributed to the high rental arrears of the 1490s but the York probate evidence suggests mortality was exceptionally low in the period 1483–98. The impact of pestilence in the first decade of the sixteenth century is clearer since this was a period of exceptionally high mortality in York and Newman noted the impact of a 1505–6 outbreak in Allertonshire. This may be connected with the fall in the arable output indices from their level of the turn of the century. Newman mentioned poor harvests in 1518–19 and 1520–1 and there is evidence for high mortality in these years in York too, possibly resulting from the conjunction of disease and bad harvests.⁵⁰ In Durham, the borough courts of Crossgate were discontinued between July 1521 and March 1522 'for fear of pestilence existing in the city and suburbs of Durham'.⁵¹ This raises the possibility of a link between high mortality and the low tithe receipts from the early 1530s shown in tables 15 and 16 although the data are not continuous enough to test the connection.

Whilst the arable economy stagnated and even declined further, there are signs of recovery in other sectors from the last decades of the fifteenth century. The best evidence for this takes the form of data on exports from Newcastle. Wade's examination of customs accounts reveals an increase in the number of monthly sailings from the port from the 1460s but especially after 1500.⁵²

Although mid-fifteenth-century realignments in overseas trade had benefited London at the expense of the north-eastern ports, the slump in wool and cloth exports appears to have ended around 1470 leading to a period of growth.⁵³ Newcastle, in particular, enjoyed increasing raw wool export levels at the turn of the sixteenth century by comparison with other English ports. Figure 9 suggests this was especially marked in the last decade of the fifteenth century and the second decade of the sixteenth. High export levels do not automatically equate to buoyant production levels and it is difficult to measure the latter in the late fifteenth century. Some major landlords did increase their stock operations in the region but production was often destined for household supply. There is less evidence of production levels on smaller livestock operations and certainly little sign of increasing wool prices before the end of the fifteenth century.⁵⁴ However, during the early sixteenth century, even when exports were low, demand was high from internal cloth producers. Any prosperity was curtailed with the collapse

⁴⁹ Newman, *Late Medieval Northallerton*, pp. 67–91.

⁵⁰ Ibid; Goldberg, 'Mortality and Economic Change', 48; D. M. Palliser, 'Epidemics in Tudor York', *Northern History* 8 (1973), 47–8.

⁵¹ DCM, Crossgate Borough Court Book 1, f. 184. I am grateful to Professor Richard Britnell for giving me this reference.

⁵² J. F. Wade, 'The Overseas Trade of Newcastle upon Tyne in the Late Middle Ages', *Northern History* 30 (1994), 33.

⁵³ R. H. Britnell, *Britain and Ireland 1050–1530: Economy and Society* (Oxford, 2004), pp. 416–19.

⁵⁴ Pollard, *North-Eastern England*, pp. 60–3; Hatcher, 'Great Slump', p. 243.

of the overseas markets for wool during the 1520s and the dramatic slump in exports shown in figure 9.⁵⁵

Until the 1520s at least, it appears that sheep-farming probably fared better than arable. To some extent, the quantities of other goods exported followed the trend of wool. Ships carrying wool to the Brabant fairs used lead and coal as ballast. Blanchard has suggested that the shifting orientation of trade back towards the Baltic after the collapse of markets in the Low Countries meant demand for lead for export remained high during the 1520s and 1530s.⁵⁶ There is evidence of increasing coal production in the final decades of the fifteenth century. Both the bishopric and priory expanded their mining operations and some pits were brought back into direct exploitation. The rents paid for those that were leased increased markedly during the late fifteenth century. Other landlords, including the Percies, began to develop their mining operations. References to the introduction of mechanical pumps during the final quarter of the fifteenth century suggest the industry was taking advantage of improved technology to expand production levels.⁵⁷ There was also expansion in other mineral extraction industries in the area, although they were less significant in providing export commodities.⁵⁸ All in all, Blanchard concluded that an increase in trade from Newcastle in the early sixteenth century is likely and it appears that producers were responding to this demand.⁵⁹

The arable and non-arable sectors of the economy of north-east England seem to have performed differently from the final quarter of the fifteenth century until the 1520s. This raises the possibility of a major shift in the rural economy of the region. If livestock-farming, and the extraction of coal and minerals increased significantly to meet the demands of buoyant internal and overseas export markets, then perhaps stagnating arable production conceals a period of demographic and economic growth. Under these circumstances, the region's grain needs would be met increasingly by imports. Examples of this type of regional specialisation can be found elsewhere in Europe. Parts of Holland provide an extreme example of falling per capita grain production associated with regional specialisation. Rising sea levels in the late middle ages made arable farming very difficult and falling grain output was caused not by depopulation but rather by a shift to livestock-farming.⁶⁰ No such geographical change occurred in Durham at

⁵⁵ I. S. W. Blanchard, 'Commercial Crisis and Change: Trade and the Industrial Economy of the North East, 1509–32', *Northern History* 8 (1973), 71–4; E. M. Carus-Wilson and O. Coleman, *England's Export Trade, 1275–1547* (Oxford, 1963), pp. 136–7.

⁵⁶ Blanchard, 'Commercial Crisis', 76–7.

⁵⁷ Lomas, *North-East England*, pp. 200–202; Pollard, *North-Eastern England*, pp. 75–6.

⁵⁸ Lomas, *North-East England*, pp. 203–6; M. Threlfall-Holmes, 'Late Medieval Iron Production and Trade in the North-East', *Archaeologia Aeliana* 27 (1999); Pollard, *North-Eastern England*, pp. 74–5.

⁵⁹ Blanchard, 'Commercial Crisis', 85.

⁶⁰ J. L. Van Zanden, 'A Third Road to Capitalism? Proto-Industrialization and the Moderate Nature of the Late Medieval Crisis in Flanders and Holland, 1350–1550', in *Peasants into Farmers? The Transformation of the Rural Economy and Society in the Low Countries (Middle Ages - 19th Century) in the Light of the Brenner Debate*, ed. P. Hoppenbrouwers and J. L. Van Zanden (Turnhout, 2001), p. 89; J. L. Van Zanden, *The Rise and Decline of Holland's Economy: Merchant Capitalism and the Labour Market* (Manchester, 1993), p. 30.

the end of the middle ages but an examination of grain imports to the region can be used to test the hypothesis of regional specialisation.

The sources for quantifying imports and exports to Newcastle in the middle ages are problematic. Enrolled Exchequer customs accounts do not provide information on grain imports, for example, and even the separate customs accounts for individual ports only give details of overseas trade.⁶¹ It is not until the earliest surviving Newcastle chamberlains' accounts, those for 1508–11, that the scale of the English coastal trade from the port can be measured.⁶² In the year beginning Michaelmas 1508 the Exchequer customs accounts record 288 individual sailings whereas the chamberlains' accounts record a further 1,190 for the same period.⁶³ Prior to 1508, therefore, there is no detailed information about a large proportion of Newcastle's seaborne trade. Even the chamberlains' accounts do not provide complete information because the chamberlains did not levy tolls on ships belonging to Newcastle merchants.⁶⁴

Grain was imported into Newcastle in the middle of the fifteenth century. For example, on 18 May 1466 two ships arrived carrying grain for which they were charged customs duties.⁶⁵ Although the quantities in which grain was imported in this period cannot be established, there is evidence that imports increased towards the end of the fifteenth century. This is suggested by an increase in the availability of grain on the overseas markets which could be imported in return for other commodities. Following a series of bitter disputes between English and Hanseatic merchants over the course of the fifteenth century, relations improved considerably under Edward IV. Easing diplomatic pressure was accompanied by changes in the structure of grain production in eastern Europe which are likely to have increased the quantities available for export.⁶⁶ During the early sixteenth century, the reorientation of overseas trade from the Low Countries to the Baltic must have further increased the availability of Baltic grain in Newcastle.⁶⁷ By 1536–42 Newcastle merchants were heavily involved in this trade with half the ships passing through the Sound in these years belonging to men from the city. Many of these ships carried grain.

It is possible to make estimates of the quantities of grain imported into Newcastle in the early sixteenth century. On the basis of the Newcastle customs accounts, which record overseas trade, Wade declared that cereal imports were 'small scale'.⁶⁸ This is belied by an examination of the chamberlains' accounts, which record both overseas and English coastal trade in cereals. Table 17 gives quantities of grain imported to Newcastle between Michaelmas 1508 and Michaelmas 1509. The data in table 17 can be used to perform a speculative

⁶¹ Carus-Wilson and Coleman, *England's Export Trade*, p. 7. For printed examples see *The Customs Accounts of Newcastle upon Tyne 1454–1500*, ed. J. F. Wade (Surtees Society 202, 1995).

⁶² *The Accounts of the Chamberlains of Newcastle upon Tyne, 1508–1511*, ed. C. M. Fraser (Society of Antiquaries of Newcastle upon Tyne Record Series 3, 1987).

⁶³ Wade, 'Overseas Trade', 37–8.

⁶⁴ *Newcastle Chamberlains*, ed. Fraser, p. xiii.

⁶⁵ *Newcastle Customs Accounts*, ed. Wade, pp. 77–8.

⁶⁶ M. M. Postan, 'The Trade of Medieval Europe: the North', in *The Cambridge Economic History of Europe*, 2: *Trade and Industry in the Middle Ages*, ed. M. M. Postan and E. E. Rich (Cambridge, 1952), pp. 197, 248.

⁶⁷ Blanchard, 'Commercial Crisis', 75–6.

⁶⁸ Wade, 'Overseas Trade', 42.

Table 17. Grain imported to Newcastle, Michaelmas 1508 to Michaelmas 1509, as recorded in the city chamberlains' accounts

	Quantities as entered in chamberlains' account	Quarters (estimated)
Wheat	275 chalders 8 quarters	1,658
Rye	274.5 chalders 10 bollis	1,648
Barley	629 chalders	3,774
Malt	377 chalders 2 quarters	2,264
Maslin	26 chalders	156
Beans	50 chalders 22.5 quarters	323

Source: *The Accounts of the Chamberlains of Newcastle upon Tyne, 1508–1511*, ed. C. M. Fraser (Society of Antiquaries of Newcastle upon Tyne Record Series 3, 1987), pp. 45–121. The amount of grain represented by a 'chalder' is not known for certain. The same word was used for around a ton of coal (*Newcastle Chamberlains*, ed. Fraser, p. 310) but there is more uncertainty for grain. Early-fourteenth-century Durham Priory accounting material contains references to the *burgh celdrum* and the *court celdrum* which represented 4.8125 quarters and 0.4375 quarters respectively. Lomas, however, considered that a *celdrum* represented 6 quarters: R. A. Lomas, *North-East England in the Middle Ages* (Edinburgh, 1992), p. 199. This higher estimate has been used in the table to permit the estimation of the maximum quantity of grain imports in the speculative analysis that follows. The entry giving a quantity of 'bollis', presumably a measure of a fraction of a chalder, has been rounded up by one chalder.

Table 18. A speculative analysis of the importance of imported grain in proportion to locally produced grain, 1508–9

Grain type	Billingham parish quarters (tithe multiplied by 10) ^a	Estimated total for priory parishes ^b	Estimated total for area between Tyne and Tees ^c	Imports as a percentage of Tyne Tees grain output
Wheat	960	4,128	31,373	6 ^d
Rye	84	362	2,751	60
Oats, peas, beans	925	3,978	30,233	1
Barley	970	4,171	31,700	19 ^e
TOTAL	2,939	12,639	96,057	10

a. These figures are based on the sum of outputs from Billingham, Cowpen Bewley, Wolveston, Bewley Manor and Newton Bewley. No oats and legumes receipt was given for Cowpen Bewley in 1508–9 so the previous two years' receipt of 8qu. was used.

b. This is a crude estimate based on multiplying the Billingham total by 4.3 which is the ratio of the value of the Billingham parish tithe corn (£52 18s. 2d.) to the total value of the priory bursar's tithe receipts in 1508–9 (£225 5s. 4d.). In fact, this is likely to be a minimum estimate since the value of tithe corn sold for cash was discounted to allow for collection costs and buyer's profit (see appendix).

c. In the absence of information from non-priory parishes, this estimate is based on the multiplication of the Durham Priory appropriated parish estimate by 7.6 which is the ratio of the number of priory bursar parishes between Tyne and Tees (eight) to the total number of parishes between Tyne and Tees (sixty-one).

d. A small quantity of maslin, a wheat and rye mix, was imported and has been included in the wheat figure used to calculate this percentage.

e. The data in table 17 include quantities of malt and barley. For the purposes of this estimate an increment of ½ bushel per quarter of barley malted has been assumed. This is based on two entries in the 1409–10 Winchester Pipe Roll: *The Pipe Roll of the Bishopric of Winchester 1409–10*, ed. M. Page (Hampshire Record Series 16, 1999), pp. 112, 119. This is likely to be an upper estimate since sometimes there appears to have been no increment in volume when barley was converted to malt: *Ibid.* p. 322.

analysis to test the possible impact of imported grain on the rural economy of the Tyne Tees region (table 18). If the estimates in table 18 do approximate to the relationship between imported grain and grain produced within the Tyne and Tees, then imports were the equivalent of 10 per cent of internal output.

This estimate of the relative volumes of imports and domestic output in the Tyne Tees region is very rough-and-ready because of a range of unknown quantities. On the one hand, the import estimates do not include grain imported on ships belonging to Newcastle merchants. These might have accounted for a substantial proportion of grain imports to the city. On the other hand, much of the grain imported to Newcastle must have been consumed outside the Tyne Tees region. Grain imports should be compared with grain output from Northumberland as well as Durham and, if data were available for grain production in Northumberland, then the significance of imports by comparison with total output would be much lower. Equally, substantial quantities of imported grain might have been reexported from Newcastle to other English ports. The attraction of coal as a form of ballast for ships arriving from the Baltic might have turned Newcastle into an *entrepôt*.⁶⁹ In the light of the above analysis, it seems unlikely that imports represented more than the equivalent of 10 per cent of domestic output by volume and probably rather less.

If grain was already being imported in the mid-fifteenth century, and imports represented less than the equivalent of 10 per cent of domestic output by the early sixteenth century, then it appears unlikely that there was a great increase in the number of people fed on imported grain in the region between 1450 and 1510. Even assuming a maximal interpretation that grain imports to Newcastle doubled between the middle of the fifteenth and the beginning of the sixteenth century, the significance of the increase in grain imports remained small by comparison with internal grain output. What is more, north-east England was not the only area of Europe benefiting from increased imports of grain from the Baltic at the end of the fifteenth century. Normandy and the Low Countries imported grain too and yet the tithe series discussed below demonstrate that these imports did not prevent rising internal production.⁷⁰

On the basis of the grain import evidence, it does not appear that the tithe data hide a period of prosperity in the Tyne Tees region at the end of the middle ages fuelled by rising output of non-arable products for export. Signs of commercial success in Newcastle are also ambiguous and difficult to assess given the lack of records from the city. A recent reassessment of Newcastle's trade at the end of the middle ages by Threlfall-Holmes, using the evidence of purchases made by the monks of Durham Priory, does suggest some degree of prosperity. The city became increasingly important as a source of supply for the monks during the late fifteenth and early sixteenth centuries, showing that the 'range and availability of goods' was maintained during this period. Threlfall-Holmes even observed 'a surprising range of the more expensive imported goods' available for purchase. However, this evidence indicates the prosperity of certain merchants and certain

⁶⁹ T. H. Lloyd, *England and the German Hanse, 1157–1611: a Study of their Trade and Commercial Diplomacy* (Cambridge, 1991), p. 289.

⁷⁰ Postan, 'The Trade of Medieval Europe: the North', p. 196.

sectors in the city. It is significant that the Durham monks sourced most of their grain, and substantial proportions of other foodstuffs, from tenant suppliers. Pockets of mercantile wealth and dynamism cannot necessarily be regarded as signs of broader economic prosperity in the city.⁷¹ One urban landlord accepted the need to lower rents at the end of the fifteenth century, even if the rent collection difficulties of the period before the 1480s had eased.⁷²

Increase in the production of non-arable goods for export must also be put into context. The pastoral sector had always been important, and it seems to have recovered more rapidly than arable farming at the end of the fifteenth century. However, wool export levels had been up to twice their c. 1500 levels in the first half of the fourteenth century. Mineral extraction might have flourished but, in the case of the metals, this was confined to certain communities, mostly in Weardale. Coal production continued to be hampered by the high costs of maintaining existing pits and the high outlay required to open new ones.⁷³ By comparison with fourteenth-century levels, coal exports to foreign countries at least were very low in the early sixteenth century. A monthly average of 610 chalders was exported in 1377–8 but between 1454 and 1509 this quantity had fallen to 85 chalders or less. Admittedly this does not take into account the English coastal trade but it would have taken a very sharp increase in quantities exported to English coastal ports to offset this decline in the overseas trade.⁷⁴ It was not until the end of the sixteenth century that coal production increased significantly in north-eastern England, dramatically changing the rural economy for several centuries to come.⁷⁵ The limited scale of any expansion in trade in Newcastle in the late fifteenth and early sixteenth centuries is indicative of the fact that, until well into the sixteenth century, the economy of north-east England suffered from low levels of local demand, possibly aggravated by a shortage of currency.⁷⁶

All in all, the hypothesis of transformation and specialisation in the rural economy of the North-east should be roundly rejected. Grain was imported into the region and these imports are likely to have increased in the late fifteenth century but, even at their new higher level, it is unlikely that they represented much more than the equivalent of 10 per cent of the grain produced in the Tyne Tees region. Non-arable production for export probably rose by comparison with the difficult period of the mid-fifteenth century but was still low by comparison with earlier levels. On the basis of this evidence, it looks like the continued stagnation of arable production levels from the 1480s into the 1530s was the result not of a rapid expansion of the non-arable sectors of the rural economy but rather of continued low population levels.

Economic conditions at the end of the fifteenth and during the early sixteenth centuries must have been more difficult for many landholders than the years of rising output in the 1460s and 1470s. The situation does not seem to have been

⁷¹ Threlfall-Holmes, *Monks and Markets*, pp. 138–48, 226–9.

⁷² Butcher, 'Newcastle', 71–3.

⁷³ Blanchard, 'Commercial Crisis', 76–84.

⁷⁴ Wade, 'Overseas Trade', 39. Evidence for coal production levels is lacking but Hatcher suggests a likely drop from fourteenth-century levels: Hatcher, *British Coal Industry*, pp. 28–9.

⁷⁵ Hatcher, *British Coal Industry*, pp. 77–80.

⁷⁶ Pollard, *North-Eastern England*, pp. 77–9.

as bleak as in the 1430s, 1440s and early 1450s, however. Those with larger holdings and greater flexibility in their allocation of resources probably suffered least. This seems to be reflected in the landholding structure in Durham villages. Lomas cited a number of examples of new arrivals in villages in south-east Durham who were able to build up substantial holdings and establish themselves as leading tenants in their communities. Likewise, the process of syndication gathered pace, devolving control to small groups of wealthy tenants on the priory estate.⁷⁷ In chapter 7 it is suggested that those tenants with sufficient income to invest, for example, in the tithes of their own holdings were best placed to survive in the difficult economic conditions of the end of the middle ages. They were also best placed to profit from expansion in non-arable sectors. Peasants without substantial landholdings are almost completely hidden from view. Even so, as in earlier periods, there is evidence of high wages from the region and the landless might have enjoyed a measure of prosperity.⁷⁸

Continental Europe

In contrast to the pattern observed around Durham, Slicher van Bath described the years 1450 to 1550 as ones of rising population and declining real wages.⁷⁹ More recent work has accepted this general picture but differences in the timing of recovery have become apparent. Yun, for example, pointed out the contrasting trends in England and areas further south during the late fifteenth and very early sixteenth centuries.⁸⁰ Perhaps the simplest way of demonstrating this contrast is a comparison of real wage rates. The indices of English builders' wage rates expressed in terms of purchasing power for a basket of consumables devised by Phelps Brown and Hopkins show the very high real wage levels of the late fifteenth century continuing up to around 1520.⁸¹ By contrast, Bois found 'a constant erosion of real wages' in Normandy from the middle of the fifteenth century to around 1540 which is matched in other parts of France.⁸² Wage rates also declined from the mid-fifteenth century in the Iberian peninsula.⁸³

The Durham estimated arable output series creates a valuable opportunity to test the differences in development in England and continental Europe. Unlike for earlier periods, there are several published series of estimates of arable production based on tithe for the fifteenth century from Castile, France and the

⁷⁷ Lomas, 'Land and People' (unpublished thesis), pp. 161–3; R. A. Lomas, 'Developments in Land Tenure on the Prior of Durham's Estate in the Later Middle Ages', *Northern History* 13 (1977), 36–7.

⁷⁸ Woodward, *Men at Work*, pp. 171–2, 214, 259–60.

⁷⁹ B. H. Slicher van Bath, *The Agrarian History of Western Europe, A.D. 500–1850* (London, 1963), p. 144.

⁸⁰ B. Yun Casalilla, 'Economic Cycles and Structural Changes', in *Handbook of European History in the Later Middle Ages, Renaissance and Reformation, 1400–1600*, ed. T. A. Brady, Jr., H. Oberman, and J. Tracy (Leiden, 1994), pp. 118–26.

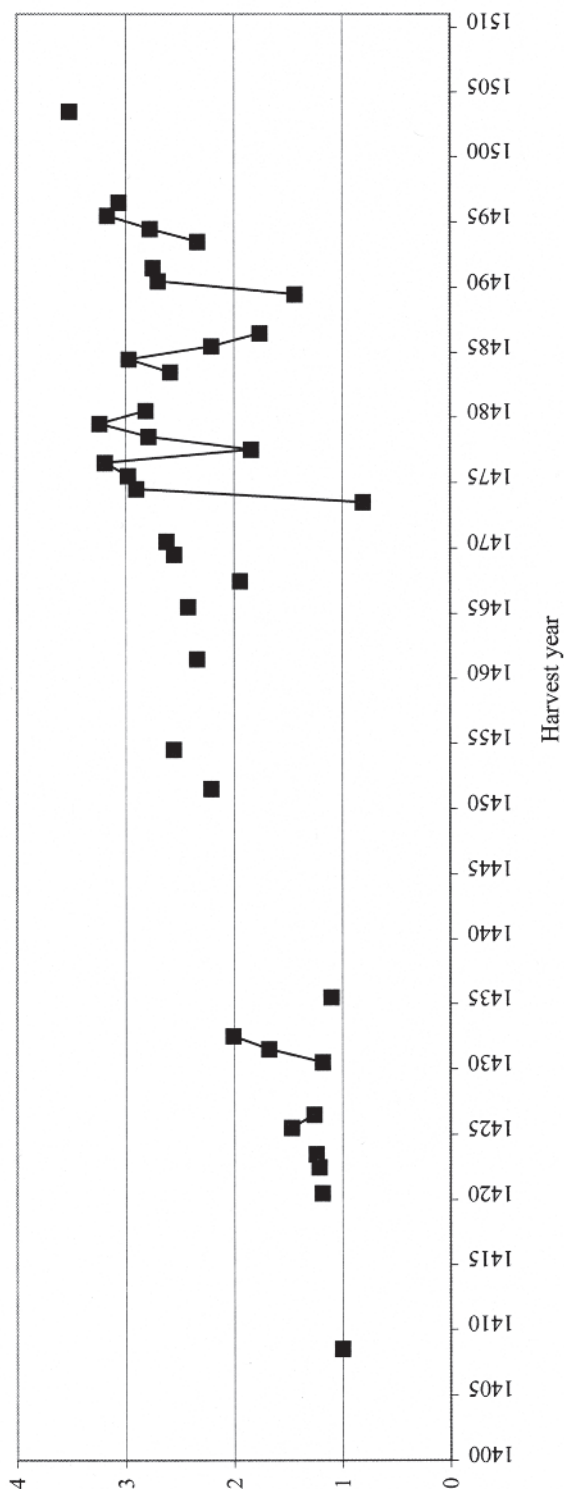
⁸¹ E. H. Phelps Brown and S. Hopkins, 'Seven Centuries of the Prices of Consumables, Compared with Builders' Wage Rates', *Economica* 23 (1956).

⁸² G. Bois, *The Crisis of Feudalism: Economy and Society in Eastern Normandy c. 1300–1550* (Cambridge, 1984), pp. 103–14.

⁸³ E. J. Hamilton, *Money, Prices, and Wages in Valencia, Aragon and Navarre, 1351–1500* (Cambridge, Mass., 1936), p. 76.

Figure 10. Estimated cereal production around Seville (Castile), 1400–1503

Index: 1408 = 1



Source: M. A. Ladero Quesada and M. González Jiménez, *Diezmo Eclesiástico y Producción de Cereales en el Reino de Sevilla, (1408-1503)* (Seville, 1979), pp. 45, 77.

Low Countries, especially for the period after 1450.⁸⁴ The different patterns of development in England and parts of continental Europe suggested by the price and wage series is confirmed by the tithe data.

The region around Seville enjoyed remarkable and sustained growth in cereal production from the third decade of the fifteenth century (figure 10). Admittedly, comparison of figures 2 and 10 is a blunt instrument for economic analysis because the two data series are different in character. In fact, the Sevillian data are better indicators of arable output than those from Durham since they are based on actual quantities of grain received as tithe which do not need to be deflated by price.⁸⁵ This means the data are more sensitive to annual fluctuations than those from Durham. Nevertheless, these methodological objections do not undermine the value of the broad comparison: cereal production levels around Seville rose to around three times their 1408 level by the end of the century while production levels declined and stagnated around Durham in the same period.⁸⁶

It might be objected that the comparison between north-east England and Andalusia is spurious because the two regions are geographically and historically so different. In the first place, the land around Seville conquered by Ferdinand III in 1247 was famously fertile. One chronicle, which describes the high quality of the olive oil obtainable in Seville, adds that 'this is to omit all the other plentiful riches which are to be found there and which it would be tedious to recount here'.⁸⁷ This, along with the favourable conditions of tenancy offered there, was a temptation to settlers from the north.⁸⁸ Secondly, the region also experienced profound demographic shock long before the crises of the fourteenth century. The Moors were expelled following the revolt in 1264–5 and many of the settlers from the north returned, selling their land in Andalusia.⁸⁹ With the additional effects of the Black Death and subsequent epidemics, this was a thinly populated but fertile region well-placed for early and rapid growth.

Not all parts of Castile were as agriculturally rich and fertile as Andalusia, however. The northern and southern meseta, divided by the Central Sierras and roughly equivalent to Old and New Castile, contain a lot of very high ground with low levels of rainfall.⁹⁰ These lands were certainly not richly fertile. In fact, Clemente's recent calculations of yield figures on seignorial demesnes in Segovia and Aguilar de Campoo before 1300 have produced results broadly

⁸⁴ For a discussion of the much more problematic comparative evidence from the late fourteenth century, see B. Dodds, 'Patterns of Decline: Arable Production in England, France and Castile 1370–1450', in *Rural Society and Agriculture in the Late Middle Ages*, ed. R. H. Britnell and B. Dodds (forthcoming).

⁸⁵ M. A. Ladero Quesada and M. González Jiménez, *Diezmo Eclesiástico y Producción de Cereales en el Reino de Sevilla, (1408–1503)* (Seville, 1979), pp. 33–5, 73–6.

⁸⁶ *Ibid.*, pp. 119–20.

⁸⁷ A. MacKay, *Spain in the Middle Ages: From Frontier to Empire, 1000–1500* (London, 1977), pp. 75–6.

⁸⁸ E. Cabrera, 'The Medieval Origins of the Great Landed Estates of the Guadalquivir Valley', *Economic History Review* 42 (1989).

⁸⁹ T. F. Ruiz, *Crisis and Continuity: Land and Town in Late Medieval Castile* (Philadelphia, 1994), pp. 7–9, 292–5; M. González Jiménez, *En Torno a los Orígenes de Andalucía: La Repoblación del Siglo XIII* (Seville, 1980), pp. 54–5, 82–4.

⁹⁰ Ruiz, *Crisis and Continuity*, pp. 12–17.

similar to those on English demesnes, including those around Durham.⁹¹ Nor did more northerly regions have the same recent history of reconquest as Andalusia. The only more northern Castilian dataset with a chronological range comparable to that of the Seville series is from the Burgos region. This material is more like that from Durham than the Seville series since the Burgos tithe data take the form of rents, received in kind from before 1450 and in cash thereafter.⁹² The increase in production levels around Burgos during the fifteenth century is not quite as impressive as that around Seville. Estimated cereal output around Seville had reached around three times its 1408 level a century later whereas in Burgos estimated output almost doubled. Nor is the rapid rise in production levels during the first half of the century apparent; in fact, the main period of increase around Burgos came in the years 1470–1510.

Strong growth in grain production in the fifteenth or early sixteenth century occurred elsewhere in Castile and the Iberian peninsula too. The Zamora tithe series used by Álvarez do not extend back to the fifteenth century. However, he was able to demonstrate a take-off in the rural economy after 1450, and especially after 1470, using evidence of an expansion of the cultivated area and an increasingly vigorous land market.⁹³ In some areas, recovery appears to have begun later still. Tithe data from the archbishopric of Toledo do not begin until 1463, after which there was fluctuation until a dramatic rise occurred in the period 1510–30.⁹⁴ A similar pattern of strong growth in the early decades of the sixteenth century is shown by deflated tithe farms from around Valencia.⁹⁵ Even outside Andalusia, there is considerable evidence for increasing arable output in the late fifteenth and early sixteenth centuries in the kingdoms of the Iberian peninsula. This forms a stark contrast with the evidence of stagnation from north-east England.

The best available fifteenth-century French tithe data come from Normandy. A disastrous collapse in arable production levels caused by English invasion and occupation in the early fifteenth century was followed by strong recovery after 1465. The contrasting trends in grain production levels in north-east England and Normandy are shown in table 19. Recovery was not equally strong in all five Normandy parishes from which data are given but there is clear evidence of the gathering momentum of increasing output in the early sixteenth century.

⁹¹ J. Clemente Ramos, *La Economía Campesina en la Corona de Castilla (1000–1300)* (Barcelona, 2003), pp. 104–9.

⁹² H. Casado Alonso, 'Producción Agraria, Precios y Coyuntura Económica en la Diócesis de Burgos y Palencia a Fines de la Edad Media', *Studia Historica Historia Medieval* 9 (1991), 73–9. Unfortunately, Casado does not provide the individual data points which would permit the plotting of his series against the one from Durham.

⁹³ J. A. Álvarez Vázquez, 'Evolución de los Arrendamientos Agrícolas de 1450 a 1850 en Zamora', in *Congreso de Historia Rural, Siglos XV al XIX: Actas del Coloquio Celebrado en Madrid, Segovia y Toledo del 13 al 16 Octubre de 1981* (Madrid, 1984).

⁹⁴ J. López Salazar and M. Martín Galán, 'La Producción Cerealista en el Arzobispado de Toledo, 1463–1699', *Cuadernos de Historia Moderna y Contemporánea* 2 (1981).

⁹⁵ J. Casey, 'Structure et Développement de l'Agriculture de Valence à l'Époque Moderne, 1500–1700', in *Prestations Paysannes Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1982).

Table 19. Deflated cash receipts for sold grain tithes in Durham and Normandy, 1399–1527

	Durham	Normandy mean	Alizay	Cliponville	Envronville	Grand-Quevilly	Saint-Martin- aux-Bruneaux
1399–1405	100	100	100	100	100	100	100
1425–1432	111	58	43	34	37	125	53
1466–1475	108	81	55	69	71	152	59
1495–1500	112	128	83	100	118	240	100
1518–1527	88*	134	93	107	132	209	131

* this figure is based only on data from 1519. Poor survival of accounting material means output indices could not be calculated for the other years.

Sources: the Durham data are deflated indices of cash receipts from sold tithes. G. Bois, *The Crisis of Feudalism: Economy and Society in Eastern Normandy, c. 1300–1550* (Cambridge, 1984), pp. 123–4.

Other parts of France were also subject to severe depredations of war in the early fifteenth century. Only after 1440, following the collapse of the Anglo-Burgundian alliance, did grain production levels begin to recover. Dupâquier's analysis of tithes farmed for grain in the Vexin suggests a doubling of production levels between 1450 and 1500.⁹⁶ The Cambrésis in eastern France, another area badly affected by military conflict in the first half of the fifteenth century, also saw increasing production between 1450 and 1520.⁹⁷

Increases in French grain production levels during the second half of the fifteenth century are not just the result of very low output levels in the war-torn countryside before 1450. Other areas of France were not subjected to such severe military depredations and enjoyed recovery in grain production which began earlier in the fifteenth century.⁹⁸ Table 20 demonstrates the strength of recovery in southern France by comparison with north-east England. The same pattern applied in the Languedoc although precise figures are not given in Le Roy Ladurie's study.⁹⁹

⁹⁶ Unpublished work of Dupâquier summarised in *Les Fluctuations du Produit de La Dime. Conjoncture Décimale et Domaniale de la Fin du Moyen Age au XVIIIe Siècle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1972), pp. 378–9.

⁹⁷ H. Neveux, *Les Grains du Cambrésis (Fin du XIVe–Début du XVIIe Siècles). Vie et Déclin d'une Structure Économique* (Paris, 1980), pp. 85, 343–5.

⁹⁸ E. Le Roy Ladurie and J. Goy, 'Première Esquisse d'une Conjoncture du Produit Décimal et Domanial Fin du Moyen Age–XVIIIe Siècle', in *Les Fluctuations du Produit de La Dime*, ed. Goy and Le Roy Ladurie, p. 343.

⁹⁹ E. Le Roy Ladurie, *The Peasants of Languedoc*, trans. J. Day (Urbana, 1974), p. 74. Even the statistical appendices provided with the original do not provide figures for wheat tithes from this date: E. Le Roy Ladurie, *Les Paysans de Languedoc* (Paris, 1966).

Table 20. Fifteenth-century grain tithe receipt levels in Durham and southern France

	Durham	Forez	Provence	Auvergne
1480–1500 (1390–1420=1)	0.9	2.5	————	————
1480–90 (1418–1424=1)	0.9	————	2.0	————
1480–1500 (1400–1420=1)	0.9	————	————	2.5

Sources: the Durham data are based on indexed receipts from tithes sold for cash, deflated by grain prices. The Forez data were collected by Fournial and presented in *Les Fluctuations du Produit de la Dîme. Conjoncture Décimale et Domaniale de la Fin du Moyen Age au XVIIIe Siècle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1972), p. 376. The Provençal data are presented in E. Le Roy Ladurie and J. Goy, 'Première Esquisse d'une Conjoncture du Produit Décimal du Dîme' in *Les Fluctuations du Produit de la Dîme*, ed. Goy and Le Roy Ladurie, p. 338. The Auvergne data are presented in P. Charbonnier, 'Les Dîmes Auvergnates du XVe Au XVIIIe Siècle' in *Les Fluctuations du Produit de la Dîme*, ed. Goy and Le Roy Ladurie, pp. 196–7 and in E. Le Roy Ladurie and J. Goy, 'Première Esquisse', p. 338.

Grain production trends in the Low Countries in the same period were more complex because of the changing political and geographical factors in the area. Hainault, from which indicators less direct than tithe have been used, followed an unusual pattern of development due to changing political allegiances. The 1430s saw a series of disastrous harvests and major shifts in the international position of Hainault as the county was acquired by the duke of Burgundy. Philip the Good ended his alliance with the English at the Treaty of Arras in 1435. This brought to an end the early-fifteenth-century recovery in production levels which the county had enjoyed because English markets were cut off. French imports arrived in the Low Countries once more. These factors were aggravated by realignments in the Baltic during the 1440s and 1450s which permitted the arrival of more grain in the Low Countries from the north. Yet, despite these difficulties and their impact on production levels, there is still evidence of recovery from the 1490s.¹⁰⁰

The exceptionally good tithe data series which have been compiled for the Low Countries confirm and clarify this picture, but with some important regional variations. Figures 11 and 12 compare tithe receipts from two areas of the Low Countries, south-west Brabant and south of Limburg, with those from Durham. Both series from the Low Countries are for tithes farmed for grain whereas those from Durham are for grain tithes which were sold for cash, the receipts from which have been deflated by grain prices. Neither series shows the spectacular take-off in arable production observable in Castile and parts of France. In both areas, however, rising output is observable from the very end of the fifteenth century. Military factors seem to have been decisive since Charles the Bold was killed at Nancy in 1477 and the subsequent non-acceptance of Emperor Maxi-

¹⁰⁰ G. Sivery, *Structures Agraires et Vie Rurale Dans Le Hainaut à la Fin du Moyen-Âge* (Villeneuve-d'Asca, 1980), pp. 541–610.

milian in the Low Countries led to intense conflict until peace was restored in the early 1490s.¹⁰¹

Comparative analysis of series of tithe receipts leaves no doubt that the failure of grain production around Durham to show any kind of recovery before 1536 was unusual by comparison with other areas of western Europe. The indirect evidence discussed at the beginning of this chapter suggests trends in Durham were not, however, very different from those elsewhere in England. Although conditions differed considerably from one country or region to the next, in general terms at least, the non-recovery of grain output in Durham over the fifteenth and early sixteenth centuries seems to reflect differences in demographic trends in England and on the continent.

There do not seem to have been very wide differences in the demographic impact of the fourteenth-century crisis across Europe and it has been argued that this homogeneity continued throughout the late middle ages.¹⁰² The comparative analysis of the Durham production data demonstrates that, on the contrary, there were very significant divergences in trends during the fifteenth century. In all the continental regions under consideration, historians have linked expanding production to demographic growth. Most have adopted a Malthusian interpretation, arguing that the recovery in population was the result of the availability of resources. Land was abundant, wage levels were high and prices were low. These factors permitted couples to marry early and led to a rise in the birth rate. So energetically did these factors operate in Normandy that Bois described 'a torrential rise in population at the dawn of the Renaissance'.¹⁰³ The problem, of course, is that resources were also abundant in north-east England.

Two schools of thought prevail in explaining the unusual English demographic developments in the fifteenth century, one emphasising low birth rates and the other high death rates.¹⁰⁴ In a pre-industrial society, in the absence of widespread and effective means of birth control, the main determinant of birth rate is age of marriage. It has been argued that the new opportunities available to women on the labour market after the Black Death, or even in some cases before, meant they married later and therefore had fewer children.¹⁰⁵ This idea has been criticised on the grounds of the unrepresentativeness of the evidence used and questioning of the assumptions about the impact of economic change following the Black Death on women's work.¹⁰⁶ Moreover, although Goldberg has drawn on continental European evidence to show cultural differences meant women in Mediterranean societies married earlier, there is as yet no evidence that the economic opportunities existing for women in fifteenth-century England should

¹⁰¹ H. Van der Wee, 'Introduction: the Agricultural Development of the Low Countries as Revealed by the Tithe and Rent Statistics, 1250–1800', in *Productivity of Land and Agricultural Innovation in the Low Countries, 1250–1800*, ed. H. Van der Wee and E. Van Cauwenberghe (Leuven, 1978), pp. 6–9.

¹⁰² O. J. Benedictow, *The Black Death, 1346–1353: the Complete History* (Woodbridge, 2004), pp. 380–4.

¹⁰³ Bois, *Crisis of Feudalism*, p. 356.

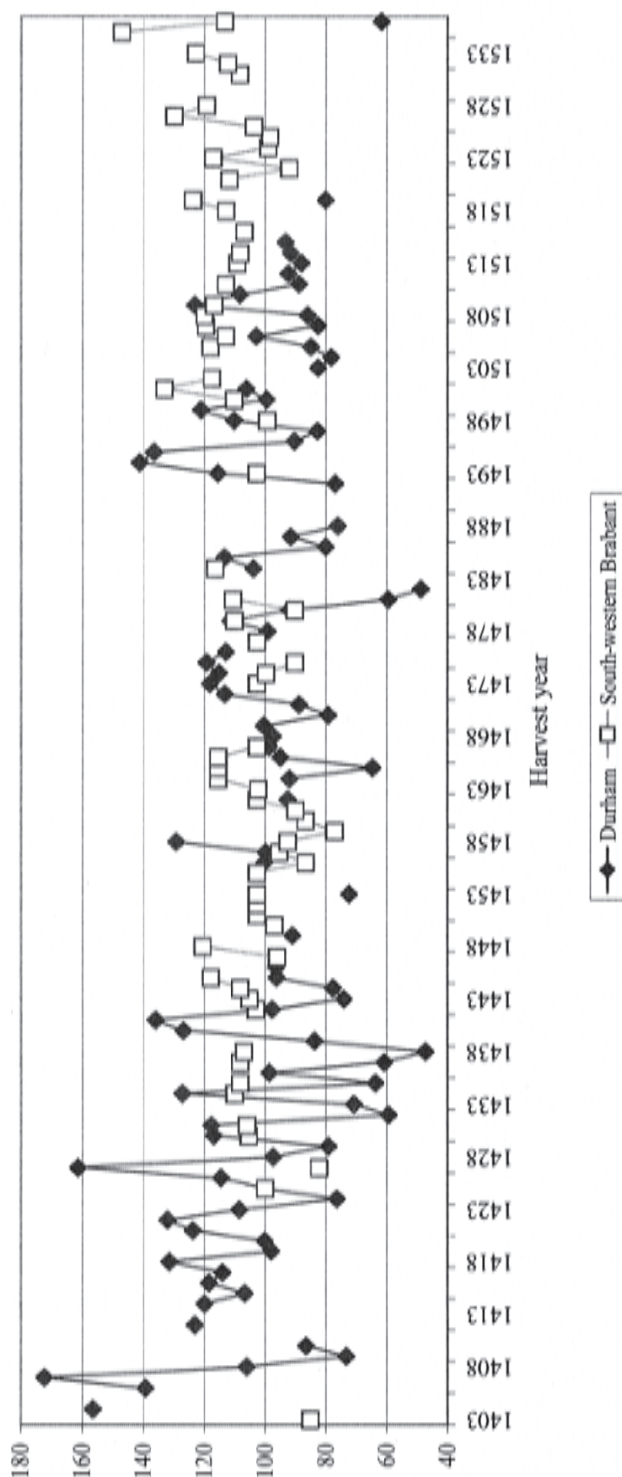
¹⁰⁴ M. Bailey, 'Demographic Decline in Late Medieval England: Some Thoughts on Recent Research', *Economic History Review* 49 (1996).

¹⁰⁵ P. J. P. Goldberg, *Women, Work, and Life Cycle in a Medieval Economy: Women in York and Yorkshire, c. 1300–1520* (Oxford, 1992), pp. 345–56; L. Poos, *A Rural Society after the Black Death: Essex 1350–1525* (Cambridge, 1991), pp. 289–91.

¹⁰⁶ Bailey, 'Demographic Decline', 3–14.

Figure 11. Tithe income (expressed in grain) in Durham and south-western Brabant, 1403–1536

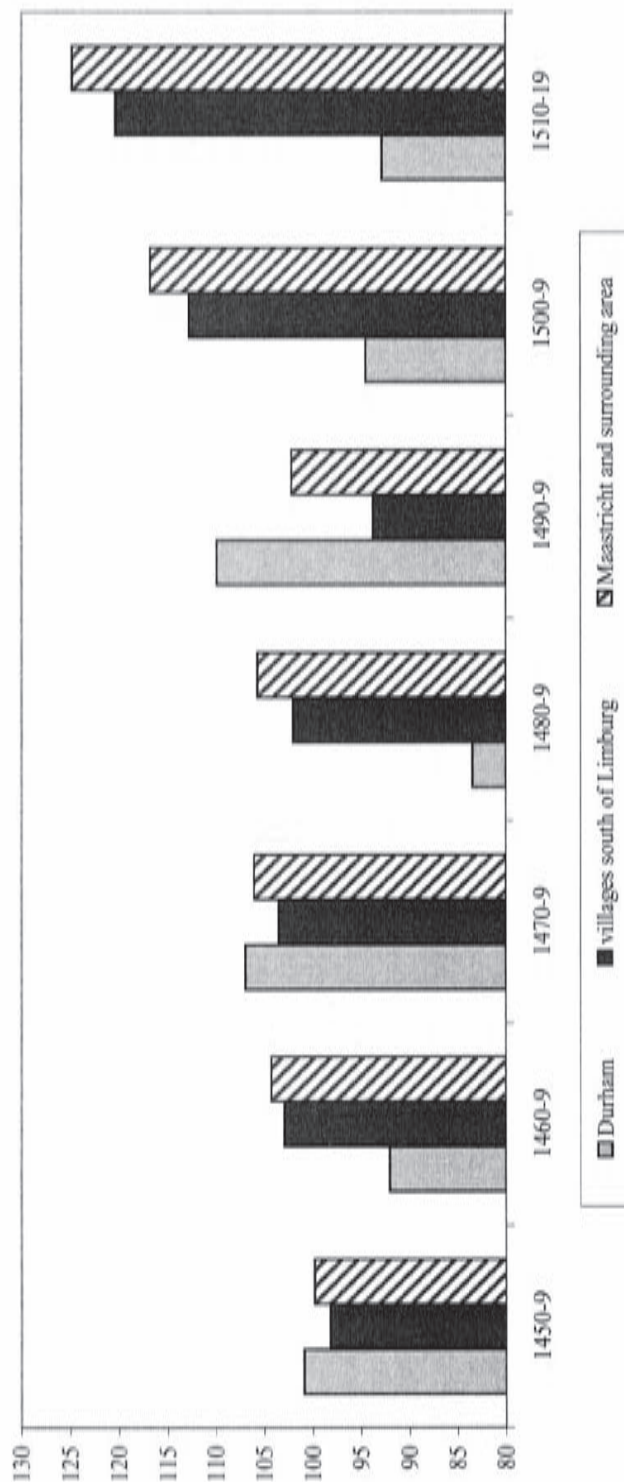
Index: 1425 = 100



Sources: F. Daelemans, 'Tithe Revenues in Rural South Western Brabant, Fifteenth to Eighteenth Centuries' in *Productivity of Land and Agricultural Innovation in the Low Countries (1250-1800)*, ed. H. Van der Wee and E. Van Cauwenbergh (Leuven, 1978), pp. 36-7.
Durham tithe data given are cash tithe receipt indices deflated by annual grain prices.

Figure 12. Tithe income (expressed as grain) in Durham and South Limburg 1440–1519

Index: 1440-9 = 100



Sources: J. C. G. M. Jansen, 'Tithes and the Productivity of Land in the South of Limburg, 1348-1790' in *Productivity of Land and Agricultural Innovation in the Low Countries (1250-1800)*, ed. H. Van der Wee and E. Van Cauwenbergh (Leuven, 1978), pp. 92-3.
 Durham tithe data given are cash tithe receipt indices deflated by annual grain prices.

have been markedly different from those in northern France and the Low Countries in the same period.¹⁰⁷

Recent work on better statistical evidence from later periods suggests there has been a tendency to exaggerate the importance of nuptiality at the expense of mortality in explaining demographic trends.¹⁰⁸ Hatcher has been the most vocal in emphasising the devastating effect of high mortality throughout the late middle ages, partly on the basis of evidence from communities for which detailed information survives.¹⁰⁹ The resolution of the problem of contrasting demographic trends in different parts of Europe might lie in varied mortality levels. The fifteenth century did not see the devastating impact of national and international outbreaks of plague such as those of 1347–9 or the early 1360s. There are, however, plenty of references to equally devastating but more localised outbreaks of epidemic disease in various forms. If age and gender selectiveness are added to the picture, then local and regional differences in the impact of plague were probably even more pronounced.¹¹⁰ Of course, areas in continental Europe where grain production increased during the fifteenth century were not free from episodes of high mortality. Bois found references to plague in Normandy in 1467, 1479, 1483 and 1499. He considered that this represented a 'retreat' of epidemic disease by comparison with the earlier fifteenth century, followed by a revival during the 1510s and 1520s.¹¹¹ Unfortunately, any comment on the damage caused by the Normandy epidemics is speculative given the absence of detailed mortality figures. There is also evidence of epidemics in Andalusia in 1467, 1480–1 and 1488 but Ponsot was surprised to observe that there are no references to these epidemics in the villages he studied outside Seville.¹¹²

It has been observed above, and in chapter 4, that in north-east England the periods during which poor harvests coincided with disease, such as the 1430s and 1480s, seem to have had more sustained impact on arable production, and possibly demography, than cases when disease operated alone. It must be emphasised, however, that this conjunction was experienced in continental Europe too. For example, MacKay observed the increasing frequency of subsistence crises in Castile during the second half of the fifteenth century and pointed out the relationship between bad harvests and plague. Evidence is particularly widespread for the impact of grain shortage and plague during the periods 1434–8 and 1465–73. In this later crisis Andalusia was very severely affected, with the combined impact of civil war, plague and food shortage. The fragmented tithe data series confirm that there were some years of shortage around this time, with very low tithe receipt levels in 1473 in particular. However, overall the 1470s appear to have been a decade of continuing expansion and it was not until the 1480s and

¹⁰⁷ Goldberg, *Women, Work, and Life Cycle*, pp. 330–56.

¹⁰⁸ J. Hatcher, 'Understanding the Population History of England 1450–1750', *Past and Present* 180 (2003).

¹⁰⁹ Hatcher, 'Mortality in the Fifteenth Century'.

¹¹⁰ J. Hatcher, *Plague, Population, and the English Economy, 1348–1530* (London, 1977), pp. 57–62.

¹¹¹ Bois, *Crisis of Feudalism*, pp. 354, 372.

¹¹² P. Ponsot, 'Un Cas de Croissance Démographique Précoce: La Basse-Andalousie au XVe et au Début du XVIe Siècle', *Annales de Démographie Historique* (1980), 145. For evidence of the complexity of the timing of epidemics in Castile during the fifteenth century see A. MacKay, 'Popular Movements and Pogroms in Fifteenth-Century Castile', *Past and Present* 55 (1972), 56.

1490s that trends in cereal production levelled off (figure 10).¹¹³ Casado observed a series of crises, related to dearth, plague and other factors, during the 1460s and 1470s in the dioceses of Burgos and Palencia further north in Castile. Although estimated grain output seems to have fallen in the 1460s, growth began again during the 1470s.¹¹⁴

In short, there is no simple explanation for the differences in trends in production and underlying differences in demographic development in Durham and continental Europe. This comparative discussion of tithe series demonstrates the problems with both fertility- and mortality-based models. At present, the data are too crude to permit the detailed discussion that might resolve some of these issues. In particular, further aggregate output series need to be compiled for other regions of England to establish the representativeness of the patterns shown by arable production around Durham. Patterns of production and demographic trends must have varied from one region to the next according to a variety of factors, including urban geography and trading links. Only when a more detailed chronology and geography of English developments is available will it be possible to extend this comparative analysis further.

*

The discussion of estimated grain output series has raised as many questions as it has answered. These questions are important, however, for the *Annaliste* and Anglo-American explanations of the economic history of the late middle ages. The lack of Malthusian population growth in a period of abundant resources in north-east England undermines the celebrated 'great agrarian cycle' thought to prevail in pre-industrial societies by the *Annalistes*.

There is more certainty in the detailed chronology of the development of the rural economy which has emerged from the analysis of the Durham tithe data. It has confirmed Hatcher's view that the late middle ages should be thought of as 'a succession of subperiods each with its own distinctive characteristics'.¹¹⁵ The depression of the 1440s and 1450s has been described in other parts of England but the phase of recovery during the 1460s and 1470s is less well-attested elsewhere. Trends are much murkier following the crisis of the 1480s but, despite recovery in non-arable sectors, there is no evidence for renewed growth or transformation in the economy of the North-east.

¹¹³ MacKay, 'Popular Movements and Pogroms', 55–9; M. A. Ladero Quesada, 'Los Cereales en la Andalucía del Siglo XV', *Revista de la Universidad de Madrid* 18 (1969), 227–30.

¹¹⁴ Casado Alonso, 'Producción Agraria', 74, 101–2.

¹¹⁵ Hatcher, 'Great Slump', p. 239.

Production Strategies

The preceding three chapters have described the changing economic conditions in the rural economy over two and a half centuries and some of the responses made by lords and tenants to those changes. The issue of cultivators' response to the demands of the market has arisen, especially in connection with the post-Black Death boom and subsequent slump in prices from around 1375. Although it will never be possible to examine the responses of large numbers of individual tenant farmers to changes in the market, as has been done for the managers of manorial demesnes, the tithe evidence can be used to gain some insights. This chapter will examine this evidence and, in particular, assess the responsiveness of peasant grain producers to market signals.

In chapter 1 a distinction was made between cultural and materialist models of peasant resource allocation. Le Roy Ladurie argued that peasants in pre-industrial France spent their energy in religious struggle rather than improving their agricultural techniques.¹ Comparable interpretations have been suggested for behaviour in more modern peasant societies. Particularly moving and vivid examples are provided by Berger in his stories based on the twentieth-century Alpine peasant community where he lived. Despite the encroachment of the modern industrial economy, Berger described the way in which some peasant farmers clung with stubborn dignity to traditional agriculture and the holdings built up by their forefathers.² According to these views, although peasants interact with a wider world by marketing some of their produce, they do not deploy all their energy and resources in maximising their agricultural efficiency because they have other priorities. Nor are they necessarily at ease when outside the traditional rural environment. The peasant probably buys and sells at disadvantageous rates from middlemen rather than going to the market himself and he may not understand the value of cash, showing a tendency to hoard.³ Anthropologist Moerman lived with a peasant community in Thailand and described discussions with a local townsman who ridiculed the naivety of peasant responses to the market.⁴

Others have thought of the peasant economy less in terms of attitudes and

¹ For details and references see above, pp. 10–13.

² See, for example, the short story entitled 'Once in Europa' in J. Berger, *Once in Europa* (London, 1983), pp. 109–180.

³ For a summary of evidence see G. Hoppe and J. Langton, *Peasantry to Capitalism: Östergötland in the Nineteenth Century* (Cambridge, 1994), pp. 8–9.

⁴ M. Moerman, *Agricultural Change and Peasant Choice in a Thai Village* (Berkeley and Los Angeles, 1968), p. 69.

more in terms of practical limitations. Historians of the English medieval peasantry have observed that producers' response to market signals was determined to a significant extent by the resources at their disposal. These varied widely even within the same village. Dyer has modelled the budgets of three types of tenant with holdings of different sizes in Bishop's Cleeve in Gloucestershire. In a reasonably good year, according to Dyer's estimates, a yardlander with thirty acres of arable land might have been left with between seven quarters five bushels and ten quarters four bushels of grain available for sale, depending on the crop rotation in use. In Cleeve in 1299 there were four tenants with holdings of this size. Many other tenants had less land at their disposal, including some eleven half-yardlanders. Dyer calculated that a half-yardlander with a family of the same size as that of the yardlander just described might have expected to produce no grain for sale or, if a three-course rotation was in use, a meagre two bushels. The next stage down from the half-yardlander was the cotlander, with only twelve acres of arable land, of whom there were some twenty-seven in Cleeve. Dyer suggests these tenants 'would only have broken even in normal years'. Yet there existed a further stratum of tenants with even smaller landed resources. Thirteen smallholders in Cleeve held only three acres of land.⁵

As Dyer pointed out, the Bishop's Cleeve tenants had other means of making money, from rights to pasture animals to the cultivation of gardens. Indeed, the tenants with smaller amounts of arable land would not have been able to survive without performing some waged labour. However, Dyer's examples clarify the meaning of what Britnell has described as 'the luxury of an entrepreneurial frame of mind', open only to 'manorial lords and a small minority of their tenants'.⁶ For many producers, any response to the stimulus of the market was made difficult by the smallness of the quantities of grain, or other produce, available for sale.

Clearly many peasant producers faced a constant struggle to remain afloat. Many holdings were scarcely large enough to provide sufficient food for family consumption, let alone raise the income necessary to pay for other consumer items. What is more, cash had to be raised in order to pay rents and taxes. Under these conditions there was precious little scope for responding to the demands of the market: all energy was expended on survival. Such peasants must have been acutely aware of market prices but the tightness of the margins under which they operated meant any adjustments in response to market signals were difficult. Under extreme circumstances, they might even have responded negatively to market incentives. Falling prices were not necessarily accompanied by falling rents and taxes. A lower unit return on output might have meant additional effort was necessary to raise production merely to maintain total income.⁷ This kind of

⁵ C. Dyer, *Standards of Living in the Later Middle Ages: Social Change in England c. 1200–1520* (Cambridge, 1998), pp. 110–18.

⁶ R. H. Britnell, *The Commercialisation of English Society, 1000–1500* (Manchester, 1996), p. 123.

⁷ M. M. Postan, 'Medieval Agrarian Society in its Prime: 7. England', in *The Cambridge Economic History of Europe, 1: the Agrarian Life of the Middle Ages*, ed. M. M. Postan (Cambridge, 1966), p. 604; M. M. Postan, *The Medieval Economy and Society: an Economic History of Britain in the Middle Ages* (Harmondsworth, 1972), p. 230. See also Kula's description of Postan's views expressed in lectures in Paris in 1961: W. Kula, *An Economic Theory of the Feudal System: Towards a Model of the Polish Economy, 1500–1808* (London, 1976), p. 43. For a more extended discussion of peasants with very small holdings see R. M. Smith, 'Some Issues Concerning Families and Their Property in

negative price response has been observed amongst smallholders in more recent periods, including those in Dixieland after the American Civil War who specialised in cotton production.⁸

The cultural interpretation of the peasant economy is based on producers' lack of interest in the market and its incentives. The materialist interpretation, by contrast, considers the peasant incapable of responding to market signals due to his economic circumstances. Although logically distinct, some crossover can be observed between the two models in the interpretation of the English medieval peasantry. Postan suggested that, since the peasant's main priority was to provide for his family, this meant he only participated in the market when he had to. As a result, he did so more when the demands made of him by lords were highest: peasant production for the market therefore peaked in the thirteenth and early fourteenth centuries but fell away in the aftermath of the Black Death when lords could not maintain such high levels of surplus extraction.⁹

Hitherto, discussions of the microeconomics of peasant production in the middle ages have been hypothetical: no accounts survive from peasant holdings. However, the Durham tithe data do shed a narrow shaft of light on the market orientation of peasant production. It is the purpose of this chapter to use the evidence from tithes to test the extent to which peasant grain producers in the Tyne Tees region responded to the incentives of the market over the course of the period under consideration. The best evidence is from the period after 1450 and will be considered first. The next section modifies the method to examine evidence for price responsiveness in the early fourteenth century. As described in chapter 2, tithes were collected on many different types of holding, not all of which could be labelled as peasant holdings. The final section discusses how far those paying tithes can be considered 'peasants' and the implications of this evidence for an understanding of peasant resource allocation.

The fifteenth and early sixteenth centuries

To test the extent to which resources were allocated in response to price, cultivators' intentions and expected price levels must be compared: did producers attempt to boost output when they thought prices would be high and did they curtail output when they predicted low prices? The only work examining medieval price responsiveness is that by Stone on manorial demesnes which reveals that price was a fundamental determinant of cereal cropping strategies in the seigneurial sector.¹⁰ The difficulty in applying this method to the tithe data is that they provide indicators of outputs but give no information on inputs. In other words, tithe data give an indication of quantities of grain harvested but do not reveal sown acreages, sowing rates, crop rotations and so forth. Output is deter-

Rural England 1250–1800', in *Land, Kinship and Life-Cycle*, ed. R. M. Smith (Cambridge, 1984), pp. 25–6.

⁸ G. Wright and H. Kunreuther, 'Cotton, Corn and Risk in the Nineteenth Century', *Journal of Economic History* 35 (1975).

⁹ Postan, *Economy and Society*, p. 201.

¹⁰ D. Stone, 'Medieval Farm Management and Technological Mentalities: Hinderclay before the Black Death', *Economic History Review* 54 (2001), 619–22; D. Stone, *Decision-Making in Medieval Agriculture* (Oxford, 2005), pp. 51–4, 86–8, 90–1, 120, 127–30.

mined not only by the cultivator's cropping strategies and other inputs but also by exogenous factors including the weather, the depredations of pests and so on.¹¹ It is therefore more difficult to compare cultivators' intentions and prices when data only survive on grain output. However, in the absence of any sustained series of quantitative data on inputs on tenant farms, a method has been developed to test the price responsiveness of Durham cultivators in the fifteenth century using the tithe data on mix of total grain output.

Variability in yields caused by factors beyond the cultivator's control (e.g. weather conditions) has a serious effect on the relationship between the cultivator's allocation of resources (e.g. sown acreage, quantity of seed sown, labour inputs) and output. However, exogenous factors might be assumed to have less effect on the quantities produced of any individual grain relative to total output. In other words, if a cultivator wanted to increase the amount of barley produced over a number of years because of rising barley prices, this decision is likely to be reflected in the greater proportion of barley in the cultivator's total output. The cultivator's desire to produce more barley may not, however, be reflected in the absolute quantities of barley produced because of the effect of changing exogenous factors. The test of price responsiveness used here is therefore based on the relationship between price and the relative quantities of grain produced, or output mix.

This test of price responsiveness is not perfect. It assumes that changing outside influences affected all crops in the field equally. Different sowing times, growing periods and susceptibilities to conditions mean that they did not. On the manor of Ketton in 1370–1, for example, the serjeant recorded reduced peas output because some of the crop was rotten due to a storm. No mention is made of the impact of the storm on wheat, barley and oats production.¹² However, analysis of price responsiveness using the output mix method does have some advantages over tests based on a single input (e.g. sown acreage). This is because farmers could vary more than one input to produce different levels of output. They could adjust sown acreage but also the intensiveness of labour inputs, the application of manure and so on. It would be possible, therefore, for a cultivator to respond to an increase in barley price by maintaining the same sown acreage whilst increasing expenditure on other inputs.¹³ In this case, price responsiveness may be reflected in various proportions of each grain which made up total output but not in the sown acreage.

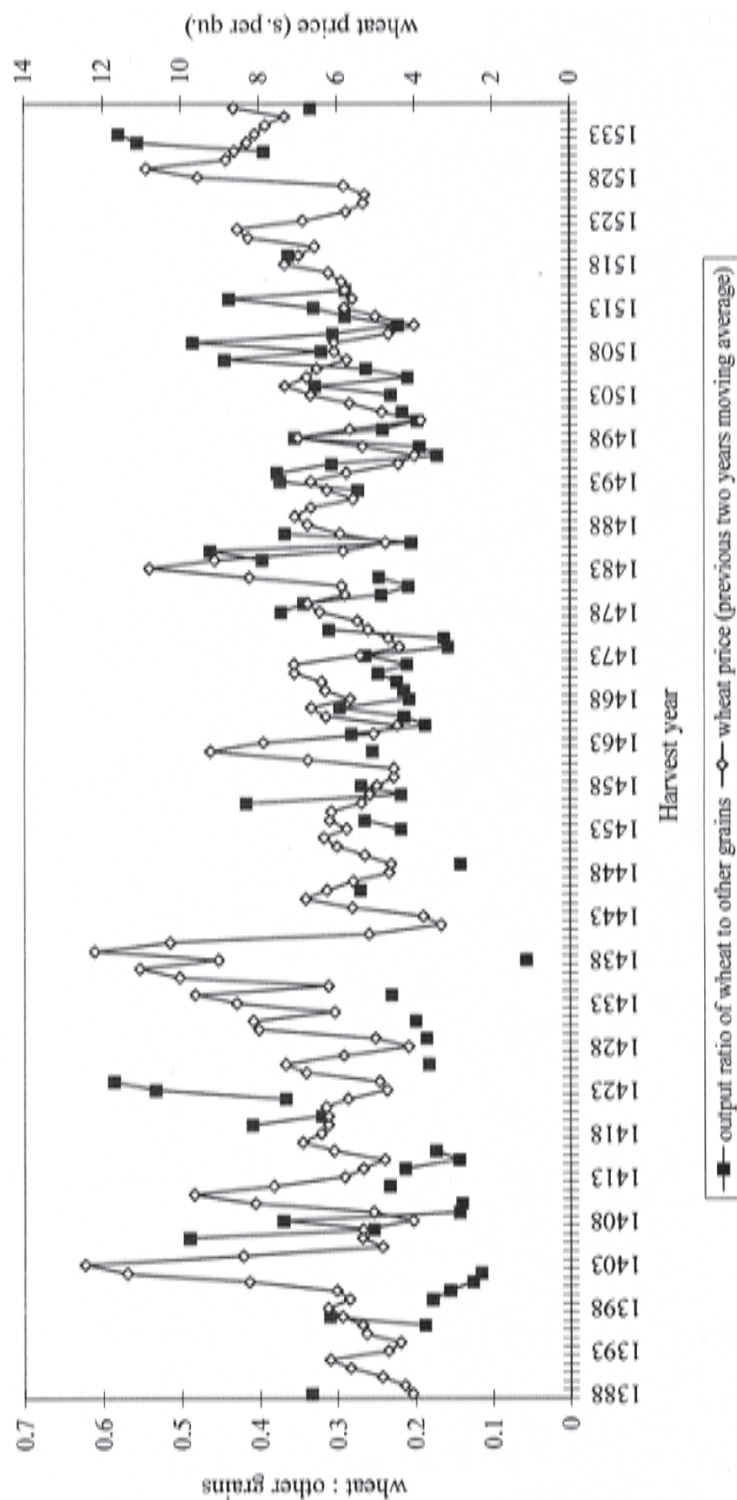
For this method, tithe output data are needed for more than one crop. This restricts the analysis of the Durham tithe data to those townships where the monks collected their tithe income directly, rather than selling it before the harvest, and recorded the quantities received in their accounts. Long continuous series of grain tithe receipts do not survive until the end of the fourteenth century and, even then, only from the townships of Billingham parish. These include Billingham itself, Cowpen Bewley and neighbouring Wolviston, Newton Bewley and Bewley manor from which tithes were collected jointly. Tithe output data for

¹¹ H. Askari and J. T. Cummings, 'Estimating Agricultural Supply Response with the Nerlove Model: a Survey', *International Economic Review* 18 (1977), 260.

¹² DCM, Ketton manor account 1370–1.

¹³ Askari and Cummings, 'Estimating Agricultural Supply Response', 260.

Figure 13. Billingham wheat output and prices, 1388–1519



Note: combined totals are given for wheat and rye in 1424, 1454, 1493, 1531 and 1536 and these have been used in the graph. Otherwise, rye is not included in the quantities of wheat used here.

wheat, barley, oats and legumes survive from the Billingham townships for many individual years, although oats and legumes are often combined in a single quantity. Following the method outlined above, tithe data can be used to calculate the proportion represented by each grain in the total output from the township and to establish any relationship between cultivators' intentions and expected price.

Econometricians disagree on the best way of estimating expected price levels.¹⁴ Given the flaws in medieval price data, and especially those from the fifteenth and early sixteenth centuries, it would be pointless to adopt a highly intricate method. Therefore expected price levels were assumed to be the same as the moving average price for the two years prior to the harvest. This necessarily crude method does not adjust for years of exceptional abundance or dearth when cultivators might not have expected prices to remain very high or very low in the coming year. The implications of this difficulty are discussed below. Finally, in most cases, the prices themselves have been used for comparison rather than price ratios (unlike the calculations used to estimate relative output). This is because, if price ratios were used, it would have to be assumed that output of all grains was equally responsive to price which would not allow for the possibility that some crops were grown for cash and others for consumption. In other words, a cultivator might reduce production of barley, his cash crop, in response to barley price decreases but ignore similar decreases in oats prices because he cultivated oats for consumption by his animals rather than for sale.

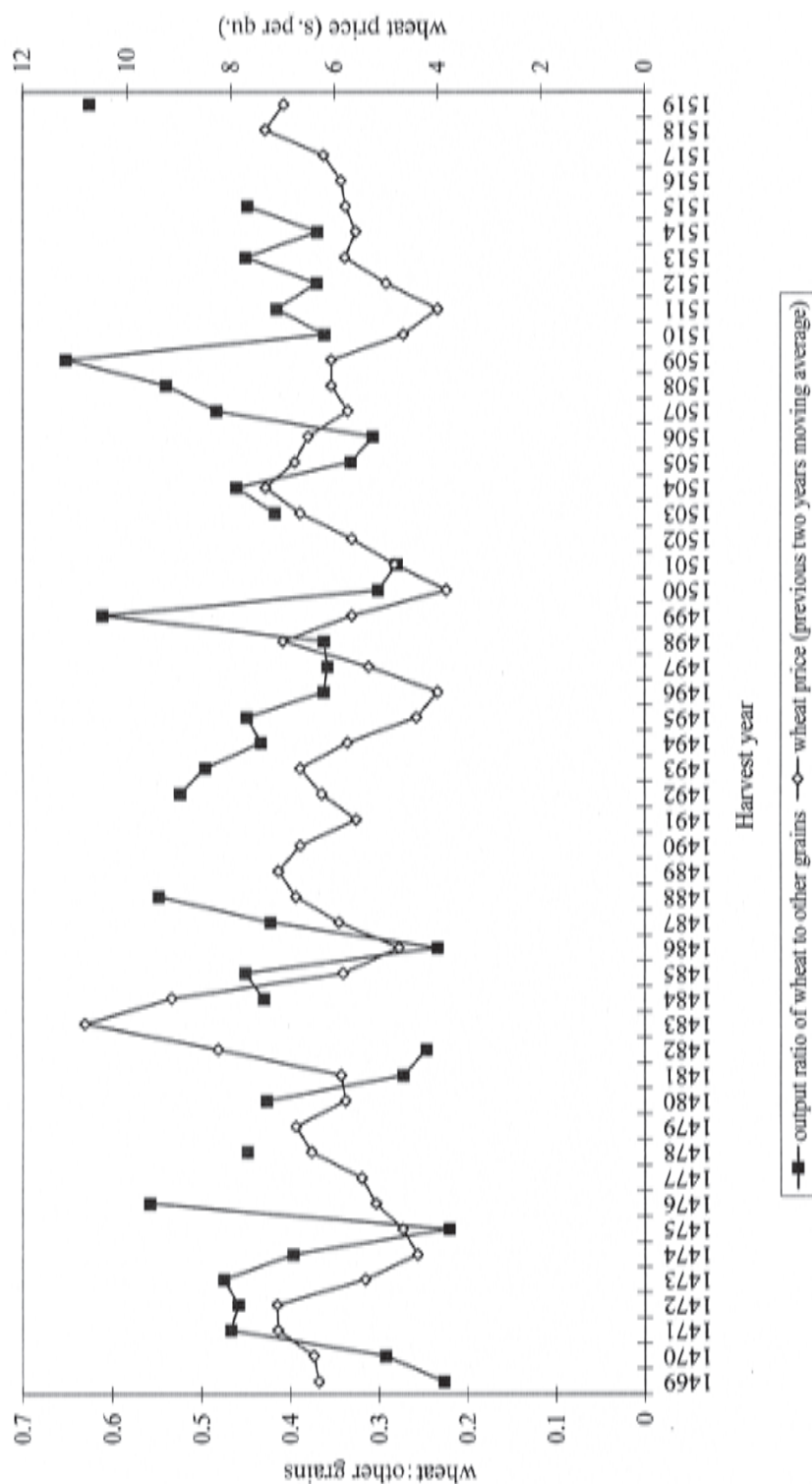
Figure 13 shows that the proportion of wheat in the total output from Billingham township was responsive to wheat prices. Responsiveness appears to have been sharpest in the second decade of the fifteenth century and after 1465. Indeed, the correspondence is so close after 1485 that the correlation coefficient between wheat as a proportion of total output and wheat price is 0.56 which shows a positive correlation significant at a 1 per cent level. If the series is taken as a whole, however, the correlation coefficient is -0.10 , showing no significant statistical relationship between wheat as a proportion of total output and price. This is the result of several years in which there appears to have been a negative relationship between the two variables, the most noticeable of which are 1400–2, 1406–10, 1422–4 and 1438. It is significant that these were years of dearth or harvest abundance following Hoskins' method of categorisation based on price data, with the exception of 1422–4.¹⁵ In such years, cultivators' control over output levels is likely to have been considerably reduced because of the effect of extreme exogenous factors. Moreover, heavy rains seem to have affected output of wheat and barley more seriously than they did that of oats. In the first half of the fifteenth century the sample of direct tithe output data seems to contain a disproportionately large number of years in which the relationship between cultivators' intended wheat output and price is distorted. This may be connected to a policy decision on the part of the monks only to collect tithes themselves when no satisfactory bids were received for their sale before harvest.¹⁶

¹⁴ H. Askari and J. T. Cummings, *Agricultural Supply Response: a Survey of the Econometric Evidence* (New York, 1976), pp. 25ff.

¹⁵ B. Dodds, 'Estimating Arable Output Using Durham Priory Tithe Receipts, 1341–1450', *Economic History Review* 57 (2004), 269.

¹⁶ B. Dodds, 'Managing Tithes in the Late Middle Ages', *Agricultural History Review* 53 (2005), 136–7.

Figure 14. Newton Bewley, Bewley manor and Wolviston wheat output and prices, 1469–1519



A similar positive relationship is observable between wheat output and wheat prices in the townships of Newton Bewley, Bewley manor and Wolviston after 1485, as is shown in figure 14 (the correlation coefficient is 0.43). The positive relationship between price and wheat production is apparent in the previous decade and a half also but the statistical correlation is offset by the divergence in 1482, a year of exceptional dearth.¹⁷ In Cowpen Bewley there also appears to have been a positive relationship between wheat as a proportion of total output and price, although any correlation is offset by the effect of the early 1480s crisis and an apparent collapse in Cowpen Bewley wheat production in the first years of the sixteenth century.

The data suggest that parishioners of Billingham were aware of price in their cultivation of crops other than wheat too. In Cowpen Bewley, for example, there are hints of a positive relationship between barley as a proportion of total output and price (figure 15). The relationship is closest after 1460 but it is not as clear as that observed for wheat production in figures 13 and 14. Again it is turned upside down in the early 1480s because of the exceptionally bad harvest of 1482.

If cultivators in Cowpen Bewley were responding positively to wheat and barley prices then the relative quantities of wheat and barley produced would be expected to reflect the wheat to barley price differential. Figure 16 shows that this was true to a limited extent and there is a fairly weak correlation between the two variables (0.21 for the period after 1462). For example, between 1465 and 1473 they expanded wheat output at the expense of barley output in response to a sharper rise in wheat prices than barley prices.

However, given that the prices of the various crops tended to move together, it is clear that not all types of output responded positively to fluctuations in price. For example, if the price of all grains rose together and barley increased as a proportion of output then this implies that one or more of the other grains produced must have decreased as a proportion of total output even though prices were rising. This is clear in the relationship between the output of expensive bread or beer grains and cheaper fodder crops. There is a negative correlation between oats and legume output, as a proportion of the total, and mean grain prices shown in figure 17. In other words, oats and legumes fell as a proportion of total output when prices were rising. The implications of this for the peasant microeconomy in Durham are discussed below.

It might be objected that the relationship between the composition of tithe output and grain price is not the result of the decisions of the producers but rather those of the tithe owners and collectors. It is possible, after all, that the monks invested more money in vigilant tithe collection when grain prices were higher. The positive correlations hitherto observed could therefore be attributed to price responsiveness on the part of the tithe owners rather than the cultivators. One way of testing this would be to compare expenditure on tithe collection with grain prices but this relationship is likely to be distorted by the fact that tithe collection

¹⁷ W. G. Hoskins, 'Harvest Fluctuations and English Economic History, 1480–1619', *Agricultural History Review* 12 (1964), 39.

Figure 15. Cowpen Bewley barley output and prices, 1396–1536

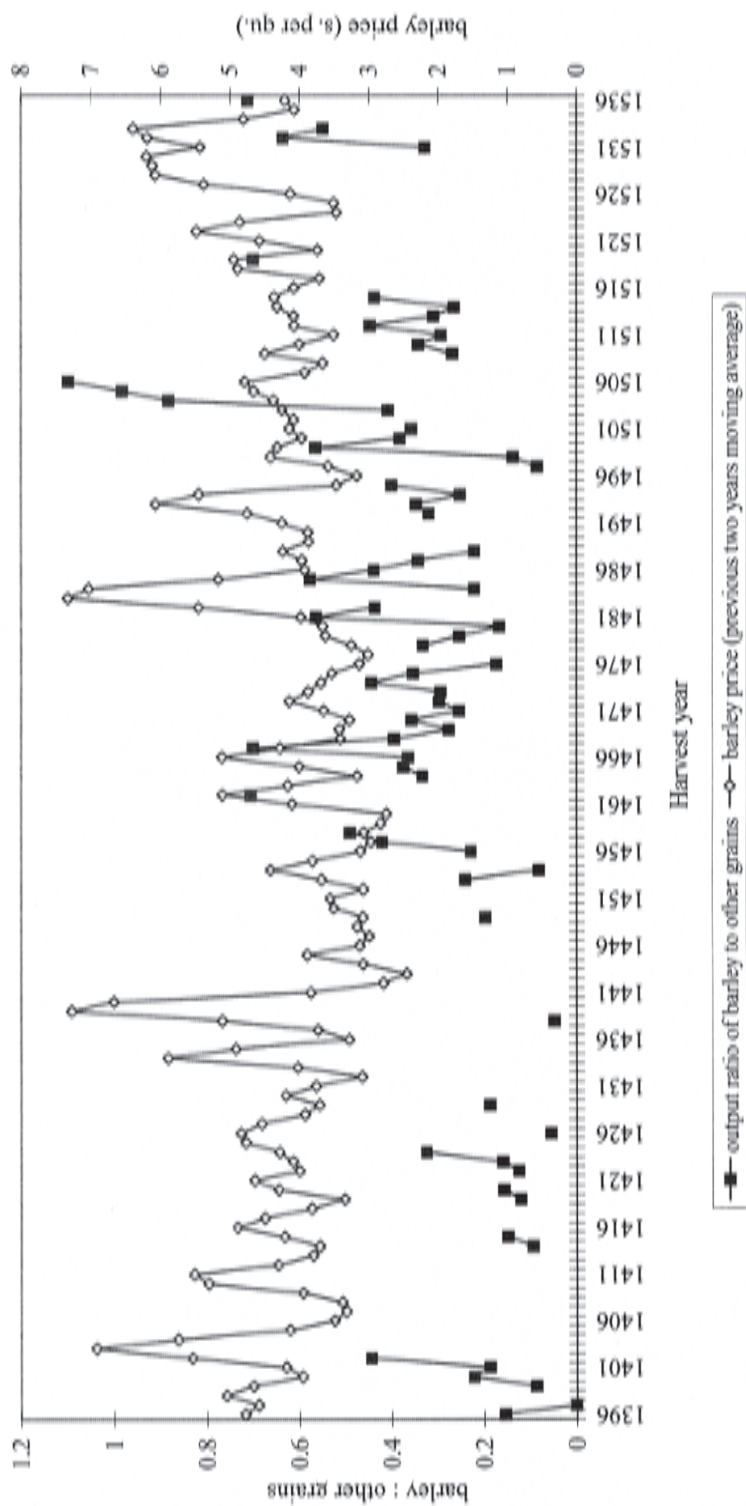


Figure 16. Cowpen Bewley output and price ratios for wheat and barley, 1396–1519

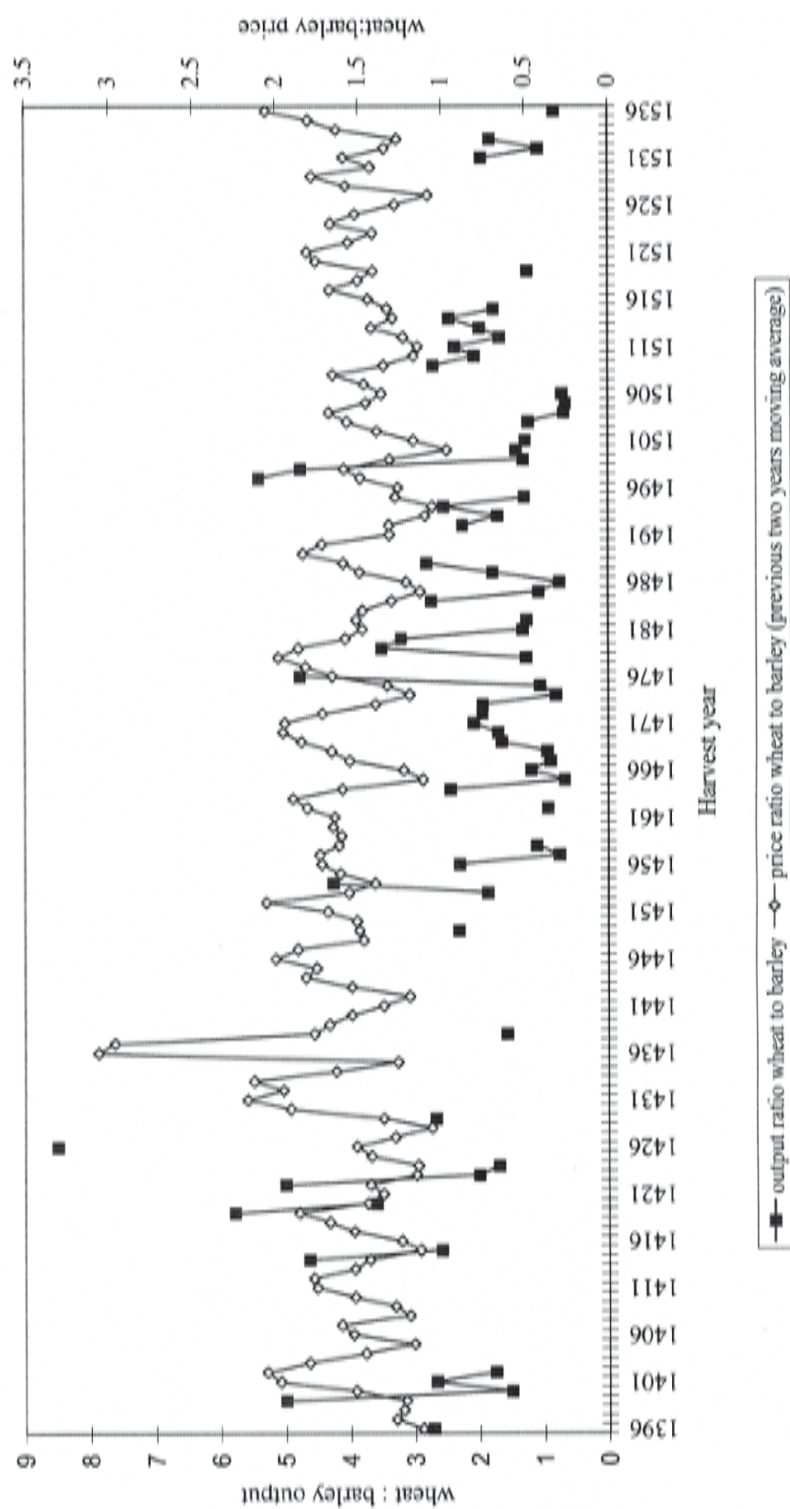
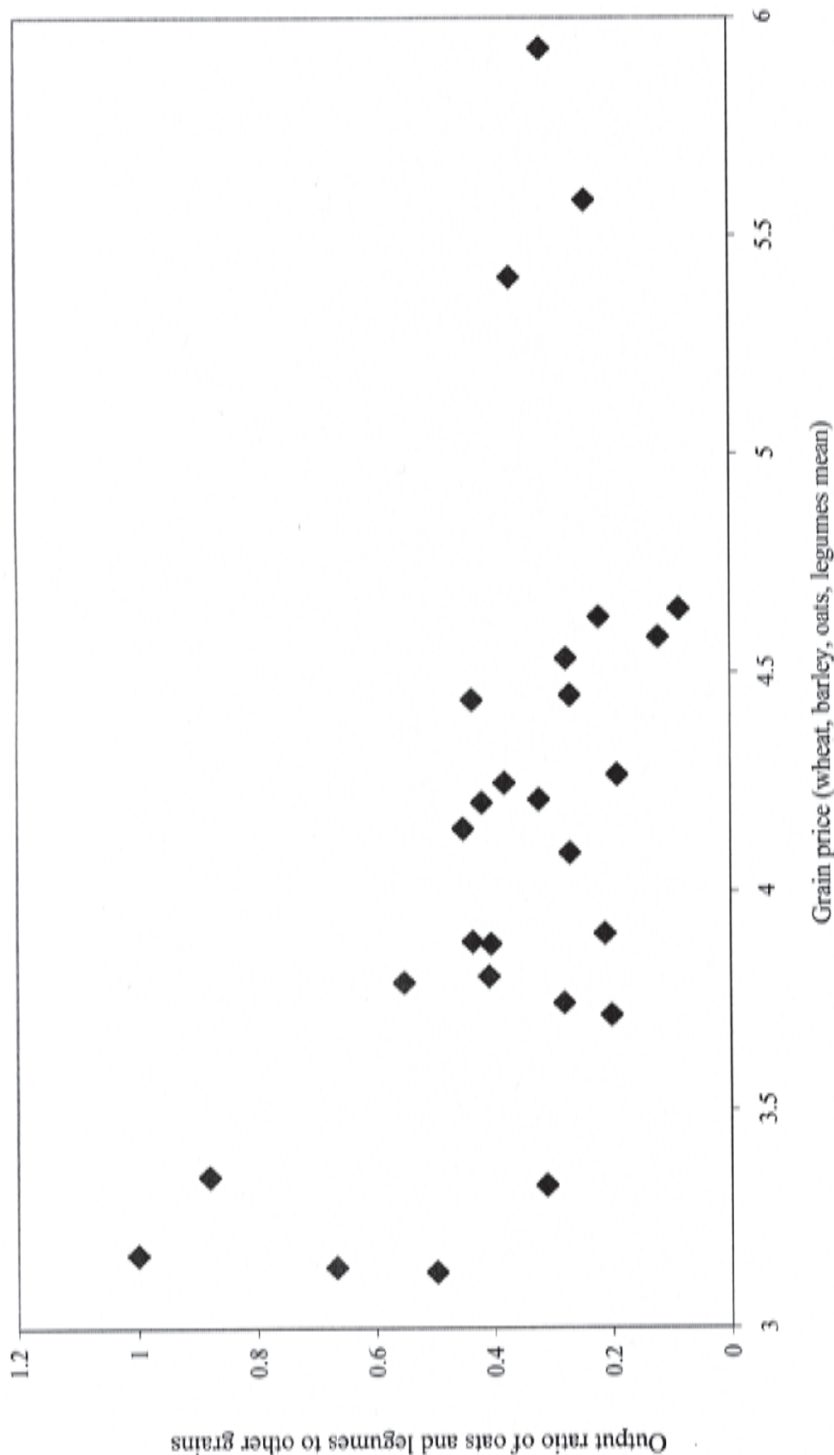


Figure 17. Cowpen Bewley oats and legumes output and mean grain price scatter graph, 1485–1536



would cost more in years of high output or years in which collection was made difficult by other factors such as heavy rain.

However, it can be demonstrated, using models of possible tithe collection strategies, that the correlations observed are not the result of price responsive tithe collection. One model suggests that the quantities of crops produced varied independently of price but the efficiency of tithe collection of all crops was directly related to price. Under this model the proportion of arable output collected as tithe would correlate with prices (e.g. 5 per cent of total output collected in a year of low prices, as near as possible to 10 per cent in a year of high prices). There would not, however, be a relationship between price and the proportion of each crop represented in the tithe output.

A second possibility is that the monks only varied expenditure on the collection of wheat and barley tithes according to grain prices and always settled for relatively inefficient collection of the tithes of the cheap fodder crops. Such a policy might be thought to lead to a direct correlation between the price of cash crops (wheat and barley) and their combined proportion of the total tithe output. Similarly the proportion of fodder crops collected might be expected to be inversely correlated with wheat and barley prices. Both these correlations have been observed in the Billingham parish tithe data. The logic of this system would depend on the relationship between the cost of maximising tithe collection and the difference in value between wheat and barley and oats and legumes. A number of factors suggest it is unlikely the monks used such a system in their tithe collection. In the first place, they had to pay for the transport of the tithe grain from Billingham to Durham, a journey of some twenty-four miles using modern roads.¹⁸ Given that the prices of the crops moved together, at least in an approximate way, and assuming it was no cheaper to transport oats and legumes than it was to transport wheat and barley, it would probably not have made sense to transport a larger proportion of fodder crops back to Durham in years of low prices. Secondly, investing more in the collection of the tithe of one crop than another was probably not a simple process. Restrictions on grazing meant that open fields had to be harvested at the same time: the animals could not be allowed to graze a particular field until all the crops had been harvested. This might have meant it was possible to collect the tithes of winter-sown crops in a different way to spring-sown crops. However, given the likelihood that a variety of spring sown crops were grown in the same field and then harvested together, collecting the tithes of oats and barley in a different way would have been much more difficult.¹⁹ Moreover, there is no mention in the documents of the costs of collecting the tithes of different grains.

Threlfall-Holmes has described the Durham monks as 'extremely price conscious'. Extensive valuation of commodities for rent payment purposes shows that this applied not only to purchasing but also to other aspects of their administration. On this basis, it is likely that there was some relationship between

¹⁸ T. Lomas, 'Land and People in South-East Durham in the Later Middle Ages' (unpublished Ph.D. thesis, Teesside Polytechnic, 1976), p. 313.

¹⁹ For the practice of harvesting fields all in one go and growing a variety of spring-sown crops in one field see: C. S. Orwin and C. S. Orwin, *The Open Fields* (Oxford, 1967), pp. 62, 143.

expenditure on tithe collection and price.²⁰ However, in the light of the discussion of tithe collection strategies above, such a relationship was probably a simple one, as described in the first of the two models. In other words, a greater proportion of total grain was probably collected in years of high prices. This would not affect the relationship between tithe output mix and grain prices.

This examination of the relationship between grain prices and the composition of tithe output from Billingham parish demonstrates that the producers there responded to grain prices in their cropping strategies and application of other inputs. Before considering the type of producers paying tithe in Billingham parish in the fifteenth century, and the implications of these findings for the understanding of peasant agriculture, some earlier evidence for price responsive resource allocation will be discussed.

The fourteenth century

Although the fifteenth-century Billingham parish tithes are the best Durham data for testing the relationship between production strategies and price, the analysis can be extended back with the development of an alternative method. Tithe and demesne output data recorded in manorial accounts surviving from before the Black Death mean the intentions of tithe payers can be compared with those of the managers of the priory's manorial demesnes. This method involves the calculation of the ratio of tithe to demesne output for the production of each grain. These ratios can be correlated with prices to determine whether tithe payers or priory demesne managers were more responsive. In other words, if the ratio of tithe to demesne output increased during a period of rising prices then this shows that producers outside the priory demesne were most responsive to prices. If, on the other hand, the ratio of tithe to demesne output fell in a period of rising prices then the managers of the priory demesne were responding more sharply to price than other producers.

Tithe to demesne output ratios reflect the intentions of the cultivators in the two sectors even though data on inputs are not used. This is because the impact of exogenous factors, such as weather, can be assumed to have affected yields on priory demesne and tithe payers' land in the same area in broadly the same way. Even if the manorial demesnes were situated on more fertile land than that held by tenants in the surrounding area, this advantage would be enjoyed every year and would therefore not affect the trend in tithe to demesne output ratios.

There is evidence that some priory demesne managers before 1349 responded more positively to price than did tithe payers in the same township. The correlation coefficient between price and the tithe to demesne wheat output ratio at Westoe in Jarrow parish indicates a negative relationship (-0.59). In other words, it is likely that the Westoe demesne managers were more successful in adjusting wheat output in response to price than the tenants in the same township. For oats production in the township of Brafferton and the manor of Aycliffe the negative correlation is even stronger (the correlation coefficient is -0.71).

However, a positive correlation between price and the tithe to demesne output

²⁰ M. Threlfall-Holmes, *Monks and Markets* (Oxford, 2005), pp. 81–5, 230.

ratio is more common. In general, tithe payers were allocating resources according to price more effectively than demesne managers. Table 21 shows that, for grains other than wheat, Westoe tithe payers responded more sharply to prices than did the managers of the priory demesne. Westoe was well situated to benefit from high levels of urban demand and it appears that demesne managers adjusted the cultivation of wheat according to market prices but that other factors had more effect on their output of other grains. The tithe payers of the same township, although enjoying the same high level of urban demand, were not as effective in their response to price in their cultivation of wheat but were more effective across the range of crops produced.

Table 21. Relationship between grain price and the ratio of tithe to demesne output in Westoe, 1323–43

Grain type	Correlation	Number of pairs of data used to calculate correlation
Wheat	−0.59	8
Barley	0.69	9
Legumes	0.67	9
Oats	0.84	8

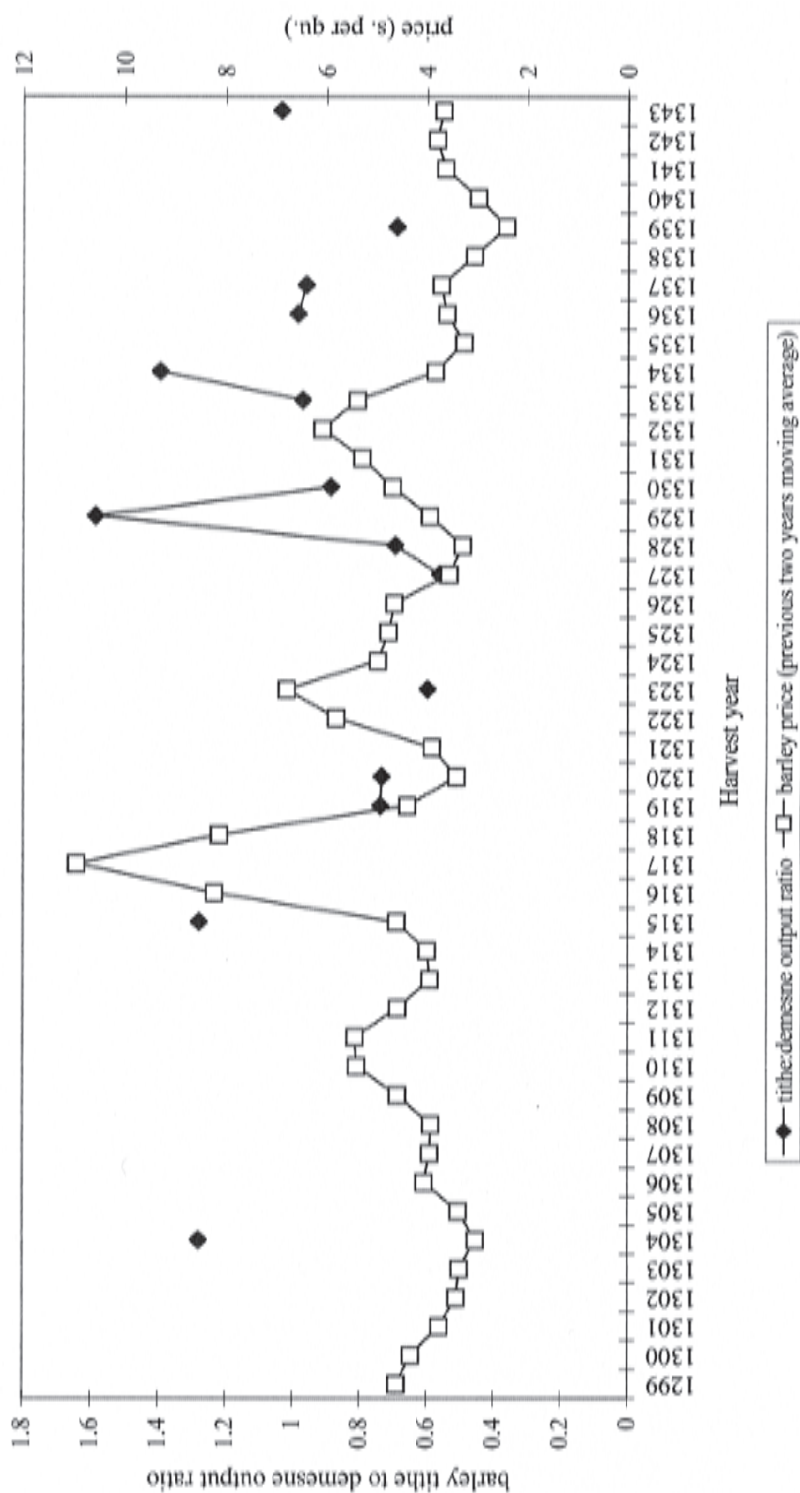
Source: DCM, Westoe manor accounts. Given the fragmentary survival of price data from the North-east in the early fourteenth century, Farmer's national price series was used. Moving average prices were calculated for the two years prior to the harvest.

The longest runs of comparable data come from Billingham township and they present a more nuanced picture than that given by the statistical correlations for Westoe. Figure 18 shows the relationship between barley prices and the ratio of tithe to demesne barley output in Billingham. The correlation statistic indicates no relationship (−0.11) and the data are so fragmented before 1319 that it is impossible to discern any link between price and output ratio on the graph. However, figure 18 suggests that from 1319 onwards Billingham tithe output did respond more positively to price than demesne output, notwithstanding anomalous years such as 1329. There is also a hint of the sharper price response of tithe payers' wheat production in Billingham by comparison with that on the demesne. In particular, tithe paying producers of both barley and wheat in Billingham responded more positively than the managers of the priory demesne to the price increase of the late 1320s and very early 1330s and then to the subsequent decrease.

The tithe to demesne output ratios only give an indication of relative price responsiveness. It is unfortunate that Durham manorial accounts rarely record sown acreage and survive in fragmented and damaged series which means it has not been possible to replicate Stone's method and to test the extent to which demesne managers were responsive to price in their cropping strategies for most of the years included in table 21 and figure 18.²¹ It is clear that the priory's demesnes in this period were not managed with commercial grain production in

²¹ E.g. Stone, *Decision-Making*, pp. 47–8, 53, 55–6.

Figure 18. Billingham tithe to demesne output ratios and prices, 1299–1343



mind. Data from the Billingham manorial accounts suggest that on this manor most of the wheat and barley produced was sown as seed corn or sent to Durham: sale was not an important method of disposal.²² In this light it is perhaps not surprising that production outside the priory demesne was more responsive to price changes. Nevertheless, this method does provide some evidence for the positive response of tithe payers to changing prices, even in the early fourteenth century.

Rethinking peasant resource allocation

The evidence for price responsive resource allocation by Durham cultivators in the late middle ages raises a number of questions about the peasant economy and, in particular, the likelihood of observing this type of behaviour in communities elsewhere in the same period. First of all, the size of holdings in the Durham villages will be considered and measured against the model budgets discussed above in order to assess the likely scale of production for sale by comparison with elsewhere. The flexibility of the agricultural system operating in the villages, and of the household economy, will then be examined to determine how and why Durham cultivators responded to prices. Finally, suggestions will be made of ways in which resources might have been allocated differently by cultivators operating in other circumstances.

Landholding

The example of Bishop's Cleeve in 1299 reveals that only a minority of tenants were able to produce substantial surpluses for sale in an ordinary year. Most tenants' holdings were so small that, after family consumption, little grain was left for marketing. Although the Durham evidence does not permit a measurement of price responsiveness on different types of holding, the sharpness of the correlations observed between price and output mix suggests the tenants must have disposed of reasonable market surpluses. This raises questions about the tenemental structure of the Durham villages and especially that of the Billingham parish townships from which most of the evidence of price responsiveness derives. In particular, the issue arises as to whether those paying tithes in Billingham parish can be described as peasants at all.

By the second half of the fifteenth century, evidence from elsewhere in England for the accumulation of holdings by wealthier villagers and the leasing of manorial demesnes indicates that many producers mobilised considerable saleable surpluses. Using a rental of 1475, Dyer observed these phenomena in operation in Bishop's Cleeve where the number of smallholders was significantly reduced from the 1299 level and a number of large accumulated holdings had emerged. An increase in the average size of holdings, and therefore of the proportion of output available for sale after consumption needs had been met, did not neces-

²² R. A. Lomas, 'The Priory of Durham and its Demesnes in the Fourteenth and Fifteenth Centuries', *Economic History Review* 31 (1978), 341–3; E. M. Halcrow, 'Administration and Agrarian Policy of the Manors of Durham Cathedral Priory' (unpublished B.Litt. thesis, Oxford, 1949), pp. 149–50.

sarily guarantee higher profits. Dyer also pointed out that by 1475 profit margins had been squeezed because of low prices and high labour costs.²³ These were the perfect conditions for price responsive production: quantities of grain available for sale had increased but circumstances meant that costs and income had to be watched very carefully.

Almost all of the land in Billingham parish was held of the priory.²⁴ However, the priory records contain no surveys of the townships in Billingham parish which permit the detailed reconstruction of peasant budgets like that carried out by Dyer. In fact, there is no source which gives comprehensive details of free and customary holdings, perhaps because of the relatively low importance of labour services in the priory's income.²⁵ Rentals do survive but they do not give acreages for each individual holding. At no point is it possible to describe the distribution of holdings in the Billingham townships but the sources do permit some details to be pieced together.²⁶ Both Billingham and Wolviston contained substantial amounts of free land which consisted, in 1430, of 133 acres 1 rood distributed in seventeen holdings in Billingham and 689 acres in seventy-two holdings in Wolviston. These townships, along with Newton Bewley and Cowpen Bewley, all contained thirty-acre customary holdings. These comprised 480 acres each in Billingham and Cowpen Bewley and 540 acres in Newton Bewley. Although the gilly-corn rental shows that such regular customary holdings had existed in Wolviston, even by the early thirteenth century there had been considerable reorganisation. In addition, the townships all contained smaller holdings.²⁷ In theory at least, the size of the units in which land was held in Billingham parish was not so dissimilar to that in Bishop's Cleeve in 1299.

However, there was considerable fluidity in the landholding arrangements in Billingham parish during the late middle ages. It is not clear whether the customary tenements were subdivided prior to the Black Death but, from the mid-fourteenth century, the general trend was for an increase in the size of holdings. This is demonstrated by the wider difference between the highest and lowest rents paid in the 1490s by comparison with the 1380s.²⁸ Even so, the reorganisation of the ancient system of landholding did not occur on the same scale in Billingham parish as in other parts of the priory estate. From the end of the fourteenth century, an increasing number of townships were let to syndicates, that is two or more individuals who held equal shares of the rent of the whole township and farmed equal portions of the land. Even by the end of the fifteenth century,

²³ Dyer, *Standards of Living*, pp. 148–50.

²⁴ *The Victoria History of the County of Durham*: 3, ed. W. Page (London, 1928), pp. 195–203.

²⁵ C. M. Fraser, 'Gilly-Corn and the Custom of the Convent of Durham', *Archaeologia Aeliana* 33 (1955), 35–7. There is no minute outline of services owed to the priory from customary tenants like that given, for example, in the 1251 Coucher Book drawn up by the bishop of Ely: *The English Manor*, c. 1200 – c. 1500, ed. M. Bailey (Manchester Medieval Sources, 2002), pp. 46–58.

²⁶ Fraser, 'Gilly-Corn'; *Feodarium Prioratus Dunelmensis*, ed. W. Greenwell (Surtees Society 58, 1872); *Durham Cathedral Priory Rentals, 1: Bursar's Rentals*, ed. R. A. Lomas and A. J. Piper (Surtees Society 198, 1986). See, in particular, the gazetteer in *Priory Rentals*, ed. Lomas and Piper, pp. 199–227.

²⁷ *Priory Rentals*, ed. Lomas and Piper, pp. 208–11; Fraser, 'Gilly-Corn', 54–6.

²⁸ T. Lomas, 'South-East Durham: Late Fourteenth and Fifteenth Centuries', in *The Peasant Land Market in Medieval England*, ed. P. D. A. Harvey (Oxford, 1984), pp. 310–11; Lomas, 'Land and People' (unpublished thesis), pp. 150–2.

syndication had still not occurred in the Billingham townships. Only between 1511 and 1524 were the syndicates formed, with Cowpen Bewley and Newton Bewley being the last priory townships to be leased in this way.²⁹

The leasing of manorial demesnes provided an additional type of land for tenant farmers in the region. From the fourteenth century there were four manorial demesnes in Billingham parish attached to the priory townships of Billingham, Wolviston, Newton Bewley and Cowpen Bewley. One was at Billingham itself, with land distributed in three open fields, and there was another separate manor attached to the same township called Belasis. A third manor, known as Bewley, was attached to the township of Wolviston and the fourth was situated near the marshland in the east of the parish and called Saltholme. The lease of the latter for corn rents up to 1350 suggests there had been arable farming there but, from then on, the manor was maintained by the monks as a centre for sheep-farming. As such, Saltholme does not appear to have featured in the monks' grain tithe income. Tithe receipts suggest arable farming was continued on the other Billingham parish manors after leasing in 1359 and 1373 in the cases of Billingham and Belasis and in 1409 in that of Bewley.³⁰ Demesne lessees have been identified as a particularly market-oriented group in the late medieval countryside.³¹ It can be demonstrated, however, that the evidence for price responsive resource allocation from the middle of the fifteenth century was not just the result of the leasing of manorial demesnes to wealthy price-conscious tenants.

The tithe receipts from Belasis were administered separately and almost always sold. The case of Billingham manor is a little more complicated since there is no separate mention of manorial tithe corn and it must be assumed that it was included with the tithe receipts from the township after the manor was leased. Unfortunately, there is no way of estimating how significant the contribution was of output from the manorial demesne to total output from the township. In the early fourteenth century, when Billingham manor was managed directly and tithe grain and manorial receipts were recorded separately, the demesne produced less than one-fifth the quantity of grain produced by the tenant land in the township. It is not possible to repeat this calculation for later periods because the final Billingham manorial account to survive dates from 1343–4. If the demesne was situated on the best land in the township, and the area under cultivation contracted after the Black Death, then it might be assumed that demesne production became relatively more important. However, in the case of Billingham, it appears that the demesne was leased piecemeal to a number of tenants and therefore it did not constitute one large holding in the township.³² The case at Bewley was more straightforward. The demesne does appear to have constituted a discreet block of lands and, from the end of the 1460s, the tithes were always recorded with those from the townships of Wolviston and Newton Bewley. However, Bewley was

²⁹ *Priory Rentals*, ed. Lomas and Piper, pp. 157–68; R. A. Lomas, 'Developments in Land Tenure on the Prior of Durham's Estate in the Later Middle Ages', *Northern History* 13 (1977), 36.

³⁰ *Priory Rentals*, ed. Lomas and Piper, pp. 208–9.

³¹ C. Dyer, *An Age of Transition? Economy and Society in England in the Later Middle Ages* (Oxford, 2005), pp. 197–210.

³² *Priory Rentals*, ed. Lomas and Piper, pp. 99–100. The lack of mention of Billingham demesne in the rental of 1495–6 indicates that it did not constitute one large holding in the township at the end of the fifteenth century either: *Priory Rentals*, ed. Lomas and Piper, pp. 164–8.

leased for around one-fifth of the value of the cash rents from Newton Bewley and an even smaller proportion of those from Wolviston in 1495–6.³³

This discussion of the contribution made by leased manorial demesnes to the tithe output of Billingham parish can be summarised as follows. Cowpen Bewley was the only township from which tithe receipts were unaffected by output from any of the demesnes. Those from Billingham included output from the leased demesne but this was distributed among several tenants. Tithe receipts from Bewley manor formed a small proportion of the tithe output of Wolviston, Newton Bewley and Bewley manor, from which tithes were entered jointly in the monks' accounts. All in all, it appears that the Billingham parish tithe receipts from the fifteenth century do not consist overwhelmingly of corn from leased manorial demesnes.

In the fifteenth and early sixteenth centuries, the accumulation of holdings meant there were substantial tenants in Billingham parish who must have disposed of considerable quantities of grain on the market. There continued to be a number of smaller tenants too whose market output must have been much lower, as shown by the rental of 1495–6.³⁴ Although it is not possible to give precise measurements, it is likely that a significant proportion of the land from which the Billingham tithes were collected was held by tenants disposing of surpluses at least as large as Dyer's yardlander in Bishop's Cleeve and probably somewhat larger.

Before the Black Death, the landholding situation was probably rather different, with less concentration of land in the hands of wealthier tenants. None of the demesnes in the parish had been leased. Even so, the quantity of grain available for sale might have been relatively high by comparison with other parts of England. Evidence does not survive for the fragmentation of holdings in Billingham in this period but, given the continued availability of land in the region, it seems unlikely that such a large proportion of tenants held very small holdings as elsewhere in England. The 1340 rental lists a large number of very small parcels of land in Billingham itself, certainly a greater number than were listed at the end of the fifteenth century, but tenants often held more than one such small parcel.³⁵

All in all, it is clear that the townships of Billingham parish were not comparable with the most densely populated regions from which medieval evidence survives, where the majority of tenants held no more than a few acres. In both periods for which there is evidence of price responsive grain production at Billingham, a substantial proportion of the land tithed is likely to have been held by tenants who were able to dispose of grain on the market. However, major changes in the pattern of landholding took place later in Billingham than in many other priory parishes. Even at the end of the middle ages, Billingham parish was not the exclusive preserve of wealthy tenant farmers. It is appropriate to describe many of those paying tithes as 'peasants'. It is likely that most holdings continued to

³³ *Priory Rentals*, ed. Lomas and Piper, pp. 159–64. Precise proportions cannot be given because of missing Wolviston data in the rental.

³⁴ *Ibid.*, pp. 157–68; Lomas, 'Land and People' (unpublished thesis), p. 168.

³⁵ *Priory Rentals*, ed. Lomas and Piper, pp. 46–9.

be run as units of family production and consumption, where market orientation was partial, even if some labour was hired.

Communal restraints

The size of the holding was not the only factor which might have limited peasants' capacity to respond to price changes in their cultivation of arable crops. The implementation of cropping strategies was restricted by communal agricultural systems. The common field system is famously inflexible: peasants held a number of strips scattered across more than one field and their cropping patterns were predetermined.³⁶ Under the classic three-field system, for example, one field would be cultivated with winter-sown crops, one with spring-sown crops and one left fallow.³⁷ In many areas, more complex cropping patterns were adopted but, nevertheless, individual peasants were not free to adjust their sown acreage in response to price.

Both the prior's demesne and tenant land in Billingham were distributed in strips throughout three fields. It is also apparent that communal controls over agriculture did not wither away in Billingham during the late middle ages. In fact, a range of evidence survives from this part of the region for communal cropping and pasturing of beasts during the late fourteenth and fifteenth centuries.³⁸ Moreover, some evidence for price responsiveness survives from the period before the Black Death when such communal controls were presumably more widely enforced.

It is possible that the system was flexible enough to permit some kind of communal price responsiveness in cropping strategies. After all, the tithe data give output for the whole township rather than for the holdings of individual enterprising farmers. There would have been plenty of opportunity for such communal decisions on cropping to be made. For example, Lomas considered the halmote courts in south-east Durham to be 'nothing more than village assemblies' where most of the business was of little interest to the lord: such an occasion would have provided the perfect opportunity to discuss cropping.³⁹ Many other such occasions would have been presented by day-to-day social intercourse in the nucleated village settlements of the region. Cropping according to collective decision-making, rather than customs set in stone, is implied by Lomas's observation that the by-laws relating to grazing on arable lands 'would vary depending on when the corn was sown and harvested, a date which differed from year to year'.⁴⁰

Even when communal restrictions on cropping were implemented, individual cultivators were not necessarily deprived of the flexibility they needed to adjust acreage sown with various crops in response to prices. In the village of Laxton

³⁶ R. H. Hilton, *The English Peasantry in the Later Middle Ages: the Ford Lectures for 1973 and Related Studies* (Oxford, 1975), p. 39; Hoppe and Langton, *Peasantry to Capitalism*, p. 10.

³⁷ B. M. S. Campbell, *English Seigniorial Agriculture, 1250–1450* (Cambridge, 2000), p. 262.

³⁸ Lomas, 'Land and People' (unpublished thesis), pp. 41–8. For an undated list of the locations of Billingham demesne lands, see Halcrow, 'Administration and Agrarian Policy' (unpublished thesis), pp. c–cx.

³⁹ Lomas, 'Land and People' (unpublished thesis), p. 248.

⁴⁰ *Ibid.*, pp. 254–5.

(Nottinghamshire), for example, some choice remained under a predetermined rotation of fallow, winter- and spring-sown crops. Orwin and Orwin observed that, although wheat was virtually the only winter-sown crop, there was much more choice in the range of spring-sown crops which could be planted in any one field.⁴¹ Billingham parish cultivators presumably made similar choices.

Nor was sown acreage the only means at the peasant's disposal in determining output. Even assuming the existence of some communal restraints, yields could be boosted, or indeed curtailed, by the varied application of a number of inputs, including manure, labour expended in weeding and so on.⁴² In the aftermath of the Black Death, for example, per capita output increased rapidly with the adoption of different techniques.⁴³ Court roll evidence reveals that peasants varied the level of inputs on their holdings throughout the period, sometimes to the annoyance of the lord. For example, villagers in south-east Durham sometimes sold their manure instead of applying it to their holdings.⁴⁴ This concerned the lord because of its possible impact on rental values since failure to manure would mean soil nutrients were not replaced. As far as the tenant was concerned, however, the sale of manure instead of its application might have represented a rational response to predicted returns for his crop.⁴⁵

Studies of more modern peasant economies show the operation of cropping strategies within the common field system. Chayanov listed a variety of methods with which Russian peasants in the early twentieth century controlled the output from scattered holdings. The key was the variation in the intensity of labour inputs, with extensive methods adopted in outlying strips and more intensive ones in strips close to the village.⁴⁶ In some respects, there were probably greater opportunities for the fine tuning of output according to price for a peasant with a number of scattered strips than for a peasant with a small discreet holding, even if communal restrictions were imposed. After all, a wider distribution of land meant a wider range of growing conditions: some strips might be in low-lying damp areas, others facing the sun in the warmest part of the day, and so on. This variety meant the cultivator could adjust inputs on each individual strip to maximise output of certain crops under current conditions.⁴⁷

Overall, there is evidence for communal restrictions on agricultural practices in Billingham parish. These must have affected the scope for individual cultivators to allocate resources in arable farming in response to price. Even so, a consideration of these communal restrictions and of evidence from elsewhere indicates that Billingham peasants did enjoy some flexibility and freedom to respond to market signals. However, communal restrictions on cropping were

⁴¹ Orwin and Orwin, *The Open Fields*, pp. 59–62, 134, 143.

⁴² Campbell, *Seigniorial Agriculture*, pp. 345–6, 356–64; Stone, *Decision-Making*, pp. 263–70.

⁴³ See above, pp. 74–80.

⁴⁴ Lomas, 'Land and People' (unpublished thesis), p. 260.

⁴⁵ For varying decisions on muck-spreading on manorial demesnes see Stone, *Decision-Making*, pp. 67–9, 112–13, 146–7, 178–80, 238–9, 246–7.

⁴⁶ A. V. Chayanov, *The Theory of Peasant Economy*, ed. D. Thorner, B. Kerblay, and R. E. F. Smith (Manchester, 1986), pp. 174–8.

⁴⁷ Although Hoskins did not believe the peasants in Wigston Magna responded to the market in the early modern period, he did observe the intricacy of cropping patterns on soils of varying type and quality: W. G. Hoskins, *The Midland Peasant: the Economic and Social History of a Leicestershire Village* (London, 1957), p. 78.

not the only restraints imposed on peasant cultivators. Given the continued link between household production and consumption indicated by the size of holdings in Billingham parish, there must have been other factors restricting the response to prices.

Household production and consumption

A peasant marketing only a small proportion of his output is likely to have determined his cropping patterns on the basis of family consumption needs rather than market demand. What is more, it has been suggested that peasants' primary concern with their own consumption needs meant they withdrew from the market if the cash demands imposed on them fell. This section will examine the impact of household production and consumption decisions on responsiveness to the market. There will also be a consideration of the decisions made by cultivators concerning the allocation of resources to different economic activities.

An examination of peasant production in years of very poor harvests in the Durham region demonstrates that price responsiveness was sometimes restricted by consumption needs. Table 22 shows that until 1401 wheat output in Billingham township responded more positively to price than did wheat output on Ketton demesne. However, between 1402 and 1406 this relationship seems to have changed. The harvests of 1401 and 1402 were exceptionally poor, as is demonstrated by the aggregate production estimates based on deflated cash tithe receipts (figure 2). Between 1401 and 1402 wheat output in Billingham township fell by nearly one-third, presumably as a result of poor yields. In the same years, however, wheat output on Ketton demesne more than doubled. This may reflect the different resources available to demesne and peasant producers. Even if peasants grew some of their crops for the market, a significant proportion of their output was used for their own consumption. Their food needs are likely to have meant that, in particularly bad years, and especially when there was more than one bad year in succession (e.g. 1401 and 1402), supplies of seed corn were reduced and their flexibility to respond to prices was curtailed.⁴⁸

Table 22. Wheat output in Billingham township and Ketton demesne and prices, 1397–1406

	Billingham township tithe (quarters)	Ketton demesne (quarters)	tithe:demesne ratio	price (s. per qu.; previous two years)
1397	31.0	35.1	0.9	5.9
1399	16.0	55.1	0.3	5.7
1400	14.0	39.3	0.4	6.0
1401	10.9	17.0	0.6	8.3
1402	7.5	35.0	0.2	11.3
1404	12.0	56.0	0.2	8.4
1406	34.8	51.7	0.7	5.4

Source: DCM, Ketton manor accounts.

⁴⁸ Hoskins, 'Harvest Fluctuations', 32–3.

Demesne managers probably had greater capacity to respond to high prices in crisis years. In periods of bad harvests, they might have had sufficient cash resources to buy seed corn and maximise production to benefit from high prices. A further possibility is that, during such periods of crisis, some peasant holdings were vacated because their previous occupants could not meet the demands made of them. In these circumstances, demesne cultivation might have expanded into these vacant tenements.

Ketton was not the only manor in the Tyne Tees region where output was expanded during the 1401–2 crisis. The same pattern is shown by evidence from two other manorial demesnes and the tithe of one further township in Billingham parish (table 23). Only Westoe manorial demesne saw a fall in wheat production between 1401 and 1402. Evidence for other periods of shortage is scarcer but it was suggested in chapter 3 that the poor harvests of the 1310s affected aggregate output more severely than that on manorial demesnes.⁴⁹

Table 23. Tithe and demesne wheat output, 1401–2 (quarters)

Source of output	1401	1402
Billingham township tithe	10.9	7.5
Cowpen Bewley township tithe	8.0	3.5
Ketton manor	17.0	35.0
Westoe manor	43.3	17.1
Fulwell manor	13.3	16.7

Source: DCM, manor accounts.

This discussion of crisis years suggests that peasant family consumption needs, and the narrowness of the margins within which peasant farms operated, sometimes limited the capacity to respond positively to prices. Equally, it is worth pointing out that the operation of the peasant household as a unit of both production and consumption might have actually given cultivators greater flexibility to respond to prices in normal years. There is no precise means of assessing the extent to which Durham peasants consumed the produce of their own holdings but their continued cultivation of a range of cereals, which must have formed a major part of their diet, suggests they did not sell all the grain they produced. It is possible that Durham peasant families were able to subordinate their subsistence needs to the demands of the market by switching their consumption from one cereal to another. In years of particularly high wheat prices, for example, income could be maximised not only by producing as much wheat as possible but also by consuming other less highly valued foodstuffs. This may be one reason why, in normal years at least, Durham peasants were able to respond more effectively to price incentives than Durham Priory demesne managers since the latter might have faced more stringent requirements in the quantities of grain to be sent to the lord for consumption or needed for other purposes. For example, demesne

⁴⁹ See above, pp. 59–60.

managers were required to make fixed liveries of wheat to *famuli* irrespective of whether wheat prices were high or low.⁵⁰

Overall, it appears that the price responsiveness of Durham peasants was not as limited as might have been expected. There were some circumstances in which they were not able to respond to prices but at other times they could do so very effectively. In fact, there are many other ways in which cultivators must have been able to maximise their income which are not revealed by the tithe data. For example, peasants probably not only produced varying quantities of grain in response to prices but they must also have varied the quantities sold and the timing of sales depending on conditions. For instance, grain prices fluctuated over the course of the year and a shrewd seller could boost profits by putting his produce on the market at the right time.⁵¹ It has been suggested that the practice of demanding rents shortly after the harvest deprived the English medieval peasant of this option.⁵² Evidence from the end of the fifteenth century suggests this did not necessarily apply in Durham Priory townships. The bursar's rental of 1495–6 shows tenants turning up in all sorts of places at all sorts of times with their payments, which themselves took many different forms.⁵³ Whilst it is true that this is likely to have been the result of the leniency of priory rent collectors, grateful to receive any payment at all in a period of high rental arrears, it shows that the possibility of the strategic timing of grain sale by peasants should not be ruled out. This is supported by archaeological evidence from the region which suggests that peasants had grain storage facilities which they kept under lock and key.⁵⁴

If tithe payers were price responsive in their grain production and sale, they are likely to have been so in the management of their pastoral operations too. In her study of Bedfordshire taxation evidence, Biddick found that livestock 'accounted for proportionally more taxable wealth than grain' and that different villages specialised in different types of livestock depending on transport routes and the proximity of markets.⁵⁵ If this was the case in Bedfordshire, then it must have been even more applicable in Durham where pasture was so much more abundant. This is reflected in the prominence of livestock in the payments in kind made by the bursar's tenants in 1495–6.⁵⁶ Indeed, in her analysis of this rental, Threlfall-Holmes observed that the majority of rents paid in kind consisted not only of grain but of other products too, indicating that most cultivators were engaged in mixed husbandry.⁵⁷

The tithe data do provide hints that producers in Billingham parish at least were making decisions about the relative profitability of arable and pastoral produc-

⁵⁰ E.g. DCM, Pittington manor accounts.

⁵¹ For the success of some demesne managers in selling their grain at appropriate times, see Stone, *Decision-Making*, pp. 86–8, 191–2, 213–14.

⁵² Britnell, *Commercialisation*, p. 122.

⁵³ *Priory Rentals*, ed. Lomas and Piper, pp. 133–97.

⁵⁴ D. Austin, *The Deserted Medieval Village of Thrislington, County Durham: Excavations 1973–74* (Lincoln, 1989), pp. 196–7.

⁵⁵ K. Biddick, 'Medieval English Peasants and Market Involvement', *Journal of Economic History* 45 (1985), 830.

⁵⁶ *Priory Rentals*, ed. Lomas and Piper, pp. 133–97.

⁵⁷ Threlfall-Holmes, *Monks and Markets*, pp. 198–9.

tion. As described above, the proportion of fodder crops in total output correlates negatively with price changes. In other words, in years of low grain prices, producers reduced the output of wheat and barley in favour of the production of fodder crops. In this way the Billingham tenants seem to have avoided dependence on the sagging market for wheat and barley and instead used additional production of fodder to fatten livestock for later sale. Despite the relative abundance of pasture in the Tyne Tees region, especially after the Black Death, animal feed remained a valuable commodity, as is shown by high rents for meadow land and infringements of the village regulations on pasturing.⁵⁸ Concentration on fodder production therefore made sense in years when the prices of cereals for human consumption were low.

Nor were arable and pastoral agriculture the only pursuits open to tithe payers. One of the conclusions of Hanawalt's study of the English peasantry is that they enjoyed a range of options in meeting their economic needs 'beyond simply tilling the soil'.⁵⁹ Previous chapters have demonstrated that Durham peasants were no exception.⁶⁰ Billingham landholders were often employed as part-time labourers, or made extra money in brewing. Some even paid off part of their rent by performing certain tasks. There is every reason to assume that rational economic decisions lay behind the choices peasants made in the way they spent their time, presumably based on some notion of the opportunity cost of activities.⁶¹

The timing of the evidence for the price responsive behaviour of the Durham tithe payers is also significant. In the second half of the fifteenth century, large numbers of vacant holdings and high levels of non-payment of rents must have meant land was easily available and at low cost by comparison with earlier periods.⁶² The high proportion of rents paid in kind shows that tenants did not necessarily need large amounts of cash to make payments. Yet, even as the cash demands made on peasants by lords fell, there was not a return to subsistence production as suggested by Postan.⁶³ Even in these circumstances, cropping strategies were strongly influenced by prevailing prices. This suggests that peasant involvement in the market was not forced upon them by the demands imposed by lords but rather formed a more integral part of the peasant economy.

Although many basic subsistence needs were probably met by produce from their own holdings, tithe payers throughout the period under consideration consumed goods which they did not produce themselves and therefore bought on the market. Some were able to afford relatively luxurious ornaments and furnishings. Richard Lauson of Fulwell, for example, the execution of whose

⁵⁸ Lomas, 'Land and People' (unpublished thesis), pp. 49–50, 249–52.

⁵⁹ B. Hanawalt, *The Ties That Bind: Peasant Families in Medieval England* (Oxford, 1986), pp. 107–40.

⁶⁰ For the expansion of the South Shields fishing industry after the Black Death, for example, see above, pp. 89–92.

⁶¹ Lomas, 'Land and People' (unpublished thesis), pp. 314–15, 328–9. Andreade Carr of Billingham, for example, was allowed 3s. from his rent for 9 days' 'scheryng' in 1495–6: *Priory Rentals*, ed. Lomas and Piper, p. 168.

⁶² For evidence of vacancies and arrears of rental payment during the fifteenth century, see chapter 5 above.

⁶³ See above, p. 134.

will was disputed in 1370, had possessed a feather bed and a bronze jar.⁶⁴ These wealthier peasants also invested in costly agricultural equipment. Thomas Page of Harton, for example, a mortuary for whom was paid in 1378, possessed two carts with wheels hooped with iron, a plough and other equipment.⁶⁵ Deluxe carts were beyond the reach of many but poorer peasants must also have made purchases. If bronze jars were too expensive, cheaper pots could be used instead, the remains of which have been discovered by archaeologists in Thrislington in Bishop Middleham parish. The same excavations turned up fragments of buckles, straps and other parts of more basic tools.⁶⁶ Fines were paid in halmote courts for the theft of building materials and fuel, including turves, timber and rushes for thatch, which were probably bought when they could not be stolen.⁶⁷

As Chayanov observed, the consumption needs of peasant families are not constant.⁶⁸ This is particularly apparent during the late middle ages, when the consumption habits of the poorer groups in society changed markedly. It has already been remarked that the wage labourers in Langland's *Piers Plowman* had grown fussier about the quality of the bread and ale they consumed.⁶⁹ Sumptuary legislation forbade the wearing of garments and ornaments by groups in society 'contrary to their estate and degree'.⁷⁰ Wealthy fifteenth-century husbandmen with larger holdings had wide consumption requirements which had to be met through the market. This demand for material possessions was borne of a desire to ape the consumer habits of the gentry.⁷¹ For example, wills and inventories from North Yorkshire 'husbandmen' in the late fifteenth century show that some had wall hangings and pewter.⁷² Rising consumer demand helps explain the price responsive allocation of resources in a period when rental payments were low and could be made in kind.

Despite this emphasis on the importance of the market and consumption patterns, it is significant that the Durham tithe payers continued to produce a range of cereals, legumes, industrial crops, livestock and livestock products rather than concentrating solely on production of those realising the highest return at any given time. This is likely to reflect the fact that they consumed a substantial proportion of their own output. Such a system of partially market-oriented farming, involving a fairly sophisticated series of decisions on the deployment of resources, is documented in other peasant societies. In parts of the Low Countries in the early sixteenth century, for example, changing sea levels meant arable farming became difficult and expensive. Peasant communities therefore expanded their pastoral operations but they did not discontinue arable farming altogether. In other words, they responded to market incentives but maintained some diver-

⁶⁴ *Halmota Prioratus Dunelmensis: 1*, ed. W. H. D. Longstaffe and J. Booth (Surtees Society 82, 1889), p. 91; *The Victoria History of the County of Durham: 2*, ed. W. Page (London, 1907), p. 199.

⁶⁵ *Halmota*, ed. Longstaffe and Booth, p. 151.

⁶⁶ Austin, *Thrislington*, pp. 190–3.

⁶⁷ Lomas, 'Land and People' (unpublished thesis), pp. 61, 325–7.

⁶⁸ Chayanov, *Theory of Peasant Economy*, pp. 130–1.

⁶⁹ *Langland's Piers Plowman*, ed. A. V. C. Schmidt (Oxford World's Classics, 1992), p. 73.

⁷⁰ E.g. sumptuary legislation from 1363 extracted in *The Black Death*, ed. R. Horrox (Manchester Medieval Sources, 1994), pp. 340–2.

⁷¹ Dyer, *Age of Transition*, pp. 128–39.

⁷² A. J. Pollard, *North-Eastern England During the Wars of the Roses: Lay Society, War, and Politics 1450–1500* (Oxford, 1990), p. 70.

sity.⁷³ Likewise, in Costa Rica in the nineteenth century, peasants responded to the opening of international markets in sugar cane, coffee and tobacco by expanding their output of these crops but they did not abandon subsistence production.⁷⁴ In fact, continued diversity of peasant production probably made economic sense. It is likely to have been partly determined by restraints on peasants' capacity to specialise. After all, communal cropping arrangements might not have precluded the maximisation of output of certain crops but it would have been wasteful of resources for a peasant to produce only one crop. It is also possible that the continued diversity of production was a type of risk insurance which meant the peasant's household subsistence would be secure even in the event of unforeseen changes in the market.

This section has argued that the price responsive allocation of arable resources is compatible with peasant household production and consumption. It is true that, under certain conditions, peasant farmers were less able to respond to price signals than the managers of manorial demesnes. However, in some ways the household unit of production and consumption gave peasants greater flexibility in their output and sale of grain. What is more, it is likely that decisions on the deployment of economic resources encompassed a range of activities including arable and pastoral farming, along with non-agricultural types of work. The suggestion that production only for subsistence was the aim of all peasant cultivators has been questioned. It is clear that the Durham peasants in the late fifteenth century, for example, did not require large amounts of cash for rent payments. However, changing consumption needs meant they continued to be responsive to market signals.

Was Durham different?

Although the rural economy of the Durham region in the late middle ages is not unrecognisable by comparison with that of other parts of England, the relative flexibility in the use of resources enjoyed by the Durham tithe payers suggests production for the market was easier there than elsewhere. This final section of the chapter will consider the likelihood of finding the same price responsive production in parishes outside the Tyne Tees region.

Unlike in other peripheral areas of the kingdom, commercial opportunities did exist between the Tyne and Tees, as is indicated in chapter 3.⁷⁵ Whilst the network of market centres was not so dense as it was in some parts of the country, there was a reasonable number of well-populated urban centres in the region. Biddick demonstrated that Bedfordshire peasants were users of more than one market and it is probable Durham peasants also visited two or more markets with varying frequency and for different purposes.⁷⁶ All the Durham Priory parishes were situ-

⁷³ J. de Vries, *The Dutch Rural Economy in the Golden Age, 1500–1700* (New Haven and London, 1974), pp. 71–2.

⁷⁴ M. Samper, *Generations of Settlers: Rural Households and Markets on the Costa Rican Frontier, 1850–1935* (Oxford, 1990), pp. 164–5.

⁷⁵ See above, pp. 51–3.

⁷⁶ T. Unwin, 'Rural Marketing in Medieval Nottinghamshire', *Journal of Historical Geography* 7 (1981), 242; Biddick, 'Market Involvement', 826–7.

ated close to at least one of the markets shown on map 3 but the price responsive Billingham peasants were particularly well located. They enjoyed access to local markets north of the Tees in Stockton, Norton and Sedgefield, with Hartlepool, Darlington and Bishop Auckland slightly further afield, but they were also within reach of markets south of the river at Yarm, Stokesley and Guisborough. These markets were of varied size and importance, with Hartlepool, Darlington and Yarm probably the largest.⁷⁷ Although Billingham was not situated on the major routeways, the area was crisscrossed by roads and villagers had access to ferries and bridges for journeys south of the Tees.⁷⁸ It is impossible to trace the movements of the Billingham tithe payers in much detail but references to carrying services and errands demonstrate that they travelled as far as Durham and York and occasionally even further.⁷⁹ Awareness of the market was fostered not only by the producers' own trips but also by visits and connections with urban merchants including, for example, the Bruntofts of Hartlepool in the early fourteenth century who held land in Wolviston.⁸⁰ In other words, Durham peasants were not disadvantaged in their access to markets by comparison with their counterparts elsewhere. There was no shortage of opportunities for producers to keep themselves informed of prices.

Even before the Black Death, the Durham peasantry probably had relatively large holdings and enjoyed a high level of access to land to graze their livestock.⁸¹ Both factors widened the range of options enjoyed by tithe payers and increased their capacity to respond to the incentives of the market. Relative freedom in the deployment of labour resources may also be significant since labour services were less onerous in the Durham region than in some areas further south. When there were constraints on the size of the sown area, and the type of crops which could be grown, the flexible deployment of labour resources must have been an important means of exercising control over output. The flip side of the historical lack of service rents in northern parts of the kingdom was the unusual predominance of money rents, even in the thirteenth and early fourteenth centuries. This might have been another factor which gave peasants the freedom, and incentive, to respond positively to price changes.⁸² Even so, the difference between Durham and the rest of the country in this respect should not be exaggerated. In chapter 2 it was demonstrated that the obligations of customary tenants in Durham priory and bishopric townships often comprised two or more days of week work, suggesting there were many other parts of the kingdom where fewer labour services were performed.⁸³

⁷⁷ C. M. Newman, 'Economy and Society in North-Eastern Market Towns: Darlington and Northallerton in the Later Middle Ages', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), pp. 134–5; C. M. Fraser, 'The Pattern of Trade in the North-East of England, 1265–1350', *Northern History* 4 (1969), 46.

⁷⁸ Lomas, 'Land and People' (unpublished thesis), pp. 65–8.

⁷⁹ *Ibid.*, pp. 197–8, 261, 313.

⁸⁰ Fraser, 'Pattern of Trade', 51–2.

⁸¹ H. M. Dunsford and S. J. Harris, 'Colonization of the Wasteland in County Durham, 1100–1400', *Economic History Review* 56 (2003).

⁸² B. M. S. Campbell, 'North-South Dichotomies, 1066–1550', in *Geographies of England: the North-South Divide, Material and Imagined*, ed. A. R. H. Baker and M. Billinge (Cambridge, 2004), pp. 145–74.

⁸³ See above, pp. 42–3.

The combination of ready access to markets and flexibility in the allocation of land and labour resources suggests the positive price response of tithe payers in the Durham region might have been unusual in the late middle ages. However, this was not necessarily the case. For instance, it has been suggested above that, even in areas of strictly controlled communal farming, some scope did exist for peasants to modify the output of particular crops. Likewise, heavy labour services might not have prevented price responsive decision-making. Peasants often had the option of commuting these services for cash payments, or even of paying someone else to perform the services for them. They might have done so when they perceived that good profits could be made with the intensive application of labour inputs on their own holdings. It is possible that some kind of market-oriented decision-making was possible even in areas where peasants enjoyed less flexibility in their allocation of resources than in Durham.

In the light of the Durham evidence and of this discussion, the possibility raised at the beginning of the chapter that some peasant cultivators responded negatively to price changes requires further consideration. Without data on peasant inputs, it is difficult to tell whether total output responded positively or negatively to prices. The tests described here deal only with the composition of output. It appears that in the post-Black Death arable boom, aggregate output did respond positively to rising prices but the relationship is much less clear for the rest of the period. In fact, given the range of choices open to Durham peasants, increasing total grain output in a period of falling grain prices would not have made sense. As observed above, under these circumstances the peasant would be more likely to switch resources to a more lucrative activity, such as livestock-farming. After all, the prices of various crops were not the only factors considered by the peasant family in deciding how to direct their activities: clearly the price of livestock, money obtainable for the products of handicrafts and so on would have to be taken into account.⁸⁴

It appears that the negative price response would have applied only in very specific circumstances, and did not apply in the Tyne Tees region in this period. The peasant would only have been forced to behave in this way if his options were very limited. His holding might have been so small that he could only keep body and soul together by specialising in intensive market production. Even in good years, all his resources would have been directed at the production of crops which he sold, and then the proceeds would have been used to buy cheaper foodstuffs for his household. If wages were low, and pastoral resources severely restricted, he would not have had the option of diversification in periods of low prices: his only option would have been to increase production. Such conditions certainly did not apply to all peasant farmers. Even in villages and periods when there were large numbers of smallholders, there were usually other tenants with larger holdings and greater flexibility in the way they used their resources. Some peasants might have found themselves in the negative price response trap at certain times but this particular type of market orientation was not universal in medieval England.

There were differences between Durham and other areas of England which

⁸⁴ Chayanov, *Theory of Peasant Economy*, pp. 108–9.

are particularly clear if the Tyne Tees region is compared with areas with large numbers of very small holdings. However, these differences should not be exaggerated and, especially after the Black Death, there were many other parts of the kingdom where cultivators enjoyed comparable flexibility in their use of resources. In the light of this evidence, it should not be assumed that medieval cultivators were unresponsive to market incentives or that they all responded by curtailing output when prices were high.

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The evidence discussed in this chapter is the only quantitative demonstration of the success of medieval peasants in responding to prices. It does not overturn the ideas of those who have developed a materialist interpretation of the market orientation of the peasant economy based on the size of marketable surpluses. Holdings in Durham were probably sufficiently large, even before the Black Death, to mean many peasants regularly sold a reasonable proportion of their output. The same is likely to have applied in many other places. Elsewhere, however, especially where there was more pressure on arable land, the relationship between price and resource allocation might have been different. Nor should price response by peasants necessarily be defined as 'entrepreneurial' since it does not mean capital was invested with a view to profit. Modifying grain production in response to price must often have been a strategy adopted to ensure the consumption needs of the peasant household were met.

The Durham evidence does, however, overturn certain views of the relationship between peasant attitudes and the market. The Durham peasants were not too primitive, too isolated, too preoccupied with other matters, too hidebound by tradition or too stupid to respond to economic incentives. Nor were they the inhabitants of a bucolic idyll beyond the reach of consumerism. In the thirteenth century Jean de Meusne sneered at simple country-folk and described their miserable existences 'tending the ancestral dungheap'.⁸⁵ This view of medieval peasants should be avoided. Dung must indeed have played a fairly significant role in peasant lives but it was a valuable fertiliser. As the above discussion of the sale of dung suggests, ancestral dungheaps were probably tended with care and well thought-out aims.

⁸⁵ A. Murray, *Reason and Society in the Middle Ages* (Oxford, 1985), p. 335.

Tithe Buyers

It has been demonstrated in chapter 6 that there was not a retreat from the market by grain producers during the fifteenth century. Despite the availability of holdings and landlords' difficulties in maintaining payments from their tenants, arable producers responded sharply to changes in price. The adjustment of grain production strategies was only one means at the disposal of farmers in responding to the market, however. In this chapter, a different type of evidence will be used to explore further the relationship between arable producers and the market during the late middle ages. The first section examines the process of tithe purchase and the identity of tithe buyers. This reveals important changes in the grain market and some of the ways in which farmers maintained income during the difficult economic conditions of the fifteenth century. The second section of the chapter considers the significance of these changes for producers' relationship with the market and economic decision-making in the countryside.

Identifying the tithe buyers

As described in chapter 2, the process of tithe purchase involved an agreement made before the harvest. The tithe purchaser entered into a contract with the tithe owner by which he or she agreed to pay a certain sum for the bought tithes on appointed days.¹ Tithes sold in this way made up a significant portion of all the grain which reached the market. If it is estimated that 6–8 per cent of all corn harvested was taken as tithe and then sold, and that between 30–40 per cent of all grain produced was marketed, then sold tithes would represent between 15–27 per cent of all grain on the market.²

Although of considerable aggregate importance for the medieval grain market, tithe seriously impeded producers' capacity to participate in this market themselves. Like other taxes and levies, tithe reduced the proportion of surplus which the producers had at their disposal. The producer was tithed at a rate of around 10 per cent of total output but the tax represented a much more significant proportion of disposable output because it was taken before the deduction of seed corn. However, the process of tithe sale by rectors meant producers could partially overcome the disability imposed on them by the tax by buying the tithes of the lands they cultivated themselves. Although they would have had to pay for what

¹ See above, p. 24.

² R. H. Britnell, *Britain and Ireland 1050–1530: Economy and Society* (Oxford, 2004), p. 198.

amounted to an exemption from tithe, the process would have expanded their marketable surplus.

The market for tithe purchase was competitive and the producers themselves were by no means the only buyers. Tithe was often bought by outsiders, with no apparent connection in the parish, as a speculative investment. Some of these buyers were grain brokers who bought tithes and then sold them on at a higher price, whilst others were urban tradesmen and women, such as bakers and brewers, who needed the grain for their businesses. Evidence from Exeter suggests that the purchase of garb tithes from the surrounding area was a significant means of supplying cities with grain.³ The clearest Durham examples of tithe purchase by outsiders come from the 1320s and 1330s when the priory found itself in serious financial difficulties because of falls in income caused by war between England and Scotland. The monks had to borrow to make ends meet and they did so from merchants whom they paid back partly in heavily discounted anticipated tithes, that is the tithes from harvests two or three years ahead.⁴

Most of these merchants were from Newcastle and the towns between the Tyne and Tees. John of Kelloe, for instance, was a merchant of Darlington who paid £120 in 1336 for the tithes of several townships for the current and following years.⁵ John de Nesbit was a Hartlepool merchant and closely involved in supplying the priory with various types of goods. He lent money to the priory and bought anticipated tithes. The best example, however, is Thomas del Holme, a merchant from Beverley in the East Riding of Yorkshire, from whom the monks borrowed over £300 and who bought anticipated and heavily discounted tithes belonging to Durham Priory in North Yorkshire. Holme seems to have made a very profitable living from this type of transaction since the monks of Malton owed him over £400 in cash and the ruinous total of £900 worth of wool, the latter presumably for cash advanced in anticipation of the clip.⁶

Prominent merchants from northern England were very important customers for the priory's tithes in the early fourteenth century. They were wealthy merchants with their fingers in lots of pies for whom trade in tithe grain was just another lucrative part of their business. Not only were these individuals benefiting from the priory's desperation but they were also probably enjoying relatively high urban demand. Whilst the second quarter of the fourteenth century was probably a difficult period for landlords in north-east England because of continuing depopulation in the countryside, wool export levels from Newcastle and Hartlepool suggest merchant fortunes revived more quickly.⁷

The domination of tithe purchase by merchants in the 1320s and 1330s was the result of unusual circumstances and was never repeated. Even so, the names of merchants also appear in the other decades of the early fourteenth century when

³ M. Kowaleski, 'The Grain Trade in Fourteenth-Century Exeter', in *The Salt of Common Life: Individuality and Choice in the Medieval Town, Countryside, and Church: Essays Presented to J. Ambrose Raftis*, ed. E. B. DeWindt (Kalamazoo, 1995), pp. 31–7, 49.

⁴ See above, pp. 64–5.

⁵ C. M. Fraser, 'The Pattern of Trade in the North-East of England, 1265–1350', *Northern History* 4 (1969), 51.

⁶ *Calendar of the Close Rolls, 1333–7* (London, 1898), p. 518.

⁷ E. M. Carus-Wilson and O. Coleman, *England's Export Trade, 1275–1547* (Oxford, 1963), pp. 43–7, 136.

the priory was less indebted and less disposed to sell tithes years in advance. Andrew Bruntoft, for example, appears in the 1300s.⁸ John de Nesbit continued to buy tithes in the 1340s. However, it becomes more difficult to find the names of merchant outsiders in the lists of tithe buyers from the late fourteenth century. Rare examples include Thomas Bee and Thomas Smyth who were Newcastle merchants in the mid-fifteenth century.⁹

Searching for names depends on knowing who the merchants were and, as such, is a rather haphazard way of testing for the changing identity of tithe buyers. There is little information on the grain trade in the region in the fifteenth century in particular. Even Threlfall-Holmes' study of Durham Priory's market involvement does not necessarily provide the names of grain merchants because the priory tended to use its tenants as a source of grain supply in the period.¹⁰ A more reliable method is to look not for outsiders buying tithes but for those with landed interests in the parishes. The comparison of tithe buyers and tenants of the bursar is possible for three years from which rentals and information on tithe buyers survive: 1340–1, 1396–7 and 1495–6. This method is unlikely to pick up all the tithe buyers with local landholding connections since the bursar was not the only landholder in his appropriated parishes. However, as described in chapter 2, he was a very major landholder and this method will therefore uncover any instances of tithe purchase by a substantial proportion of tenants in priory parishes.¹¹ The results are shown in table 24.

Table 24. Numbers buying tithes and holding land from the Durham Priory bursars, 1340–1496

	1340–1*	1396–7	1495–6
Number of tithe buyers	30	37	46
Number of tithe buyers holding land in the parish where they bought tithes	4	21	19
%	13	57	41

* The 1340–1 bursar's account does not contain a complete list of tithe buyers and therefore the two accounts covering the period c. 11 November 1341 until c. 11 November 1342 have been used.

Source: *Durham Cathedral Priory Rentals, 1: Bursar's Rentals*, ed. R. A. Lomas and A. J. Piper (Surtees Society 198, 1986).

Unfortunately the 1340–1 rental material has to be compared with the list of tithe buyers from 1341–2 but this is unlikely to distort the pattern observed too seriously since a very high turnover of tenants would not be expected in so

⁸ Fraser, 'Pattern of Trade', 51–2. Bruntoft also extended credit to the prior of the dependent cell of Finchale in the early fourteenth century: *The Priory of Finchale: the Charters of Endowment, Inventories and Account Rolls*, ed. J. Raine (Surtees Society 6, 1837), pp. viii, ix, xi, xiii.

⁹ M. Bonney, *Lordship and the Urban Community: Durham and its Overlords 1250–1540* (Cambridge, 1990), p. 173; *Durham Cathedral Priory Rentals, 1: Bursar's Rentals*, ed. R. A. Lomas and A. J. Piper (Surtees Society 198, 1986), p. 188.

¹⁰ M. Threlfall-Holmes, *Monks and Markets* (Oxford, 2005), pp. 136–42.

¹¹ See above, p. 38.

short a period of time. The data show a sharp increase over the second half of the fourteenth century in the proportion of tithe buyers holding property from the bursar in the parish where they bought tithes. Occasionally, the tenants were grain merchants rather than local producers. John de Nesbit, for instance, was a Hartlepool merchant who leased the Aycliffe mill and bought tithes in the same parish, potentially a highly rewarding joint investment. However, almost all the other tenant tithe buyers held land rather than mills and do not seem to have been prominent in urban merchant communities. Table 24 shows a slight reduction over the course of the fifteenth century in the number of tithe purchasers holding land from the bursars. In fact, it is probable that the number who bought tithes from land which they cultivated themselves actually increased over the same period. Of the twenty-one tithe buyers holding property from the bursar in 1396–7, twelve held land not only in the same parish but also in the same township where they bought tithes. In 1495–6 this had risen to eighteen out of nineteen.

The apparent withdrawal from tithe purchase of merchant outsiders in favour of tenants may reflect decreasing mercantile involvement in the grain trade in general in the late fourteenth century. The collapse in grain prices following the bumper harvests of the mid-1370s must have meant that mercantile investment was directed towards products other than grain, including manufactured and luxury items.¹² Tithe purchase by tenants requires further examination. Even the cheapest tithes of the smallest and most unproductive townships were too expensive for most peasants. For example, the tithes of North Sherburn sold for £10 in 1380, well beyond the means of the sixteen customary tenants in the township paying just over £1 cash rent per annum.¹³ It is possible that tithe purchase was brought within the means of producers with standard-sized holdings through the process of resale. Maybe those who bought the tithes from the priory then sold them on to the tenants, effectively offering cash commutation in lieu of garb tithes and giving peasants a chance to buy back their tithe at a discounted rate. Although this happened elsewhere, it does not seem to have been common in Durham.¹⁴ When the priory collected lots of tithes directly, presumably due to lack of satisfactory bids, they always collected corn rather than a series of cash payments from the individual producers.

Investment in tithe purchase was not possible for those with single customary holdings or smaller parcels of land, many of whom must have produced only a small amount of grain for sale. However, multiple holdings became more common after the Black Death. William Jacson, for example, bought the tithes of Monkton in 1396–7 and had a collection of holdings in the same township including a toft with sixty acres and a second toft with twenty-three acres. He was probably the same person as the William Jacson who held a toft and a collection of small holdings in neighbouring Westoe.¹⁵ Collections of multiple holdings

¹² Britnell, *Britain and Ireland*, pp. 336, 338; Kowaleski, 'Grain Trade', pp. 27–8. For the decline of the London cornmongers see: J. A. Galloway, 'Driven by Drink? Ale Consumption and the Agrarian Economy of the London Region, c. 1300–1400', in *Food and Eating in Medieval Europe*, ed. M. Carlin and J. T. Rosenthal (London and Rio Grande, 1998), p. 99.

¹³ *Bishop Hatfield's Survey*, ed. W. Greenwell (Surtees Society 32, 1856), pp. 148–50.

¹⁴ C. Dyer, *An Age of Transition? Economy and Society in England in the Later Middle Ages* (Oxford, 2005), p. 189; R. N. Swanson, *Church and Society in Late Medieval England* (Oxford, 1989), p. 241.

¹⁵ *Priory Rentals*, ed. Lomas and Piper, pp. 76–7, 80. Identification with a William Jacson who leased

were still based on older landholding structures within the townships and, at least in the early fifteenth century, were often shortlived. More permanent were the syndicates of tenants, described in chapter 2, which took on the lease of whole townships, numbering between two and thirteen individuals.¹⁶ Tithes were often bought by one or more syndicate members and sometimes by the whole group. For example, the tenants of Westoe took out a twelve-year lease on the tithes of their township in 1475.

Not only were multiple holdings accumulated by individuals in the Durham villages, and whole townships eventually turned over to the syndicates, but new types of holding also became available including, most importantly, leased demesnes. The manor of Ketton, for example, was leased to the widow of Thomas Strangeways in 1495. She seems to have been holding her deceased husband's desirable lease for other members of her family and it was they who made the payments.¹⁷ Thomas Strangeways junior, presumably one of her sons and one of those who dealt with the day-to-day running of the farm, bought the tithes.

Individuals with multiple holdings, the members of syndicates and demesne farmers enjoyed considerable advantages in bidding for the tithes of the land they cultivated themselves. Tithe collection on land cultivated by other people was expensive because of the level of supervision it required. Not only were binders required to collect the corn but mounted supervisors also had to be employed to keep a careful eye on proceedings. Those who produced the corn used many ruses to defraud the tithe collectors, including leaving the worst corn in the tithe sheaf and removing tithe sheaves from the fields before the collectors could compare them with the others. In a period of rising labour costs, like the century after the Black Death, these processes became very much more expensive.¹⁸ If those cultivating the land bought tithe corn from that same land, they effectively bought exemption from tithe and obviated collection costs.

It is possible that the advantages enjoyed by tithe-buying tenant syndicates and demesne farmers were greater in north-east England than further south because of the structure of the parishes. Instead of the parish being the same as the village, as was the case further south, northern parishes often consisted of several discrete townships, the tithes of which were sold separately. This meant that when an individual took on the farm of a demesne or when a syndicate of tenants leased a township, they were often taking control of one of the units in which tithe was sold. In areas where settlement was more nucleated, large accumulated holdings and manorial demesnes more often consisted of series of strips intermixed with those of other tenants. Therefore, it was more difficult to buy the tithes only of one's own holding in southern England than in the North.

Tithe purchase made a considerable difference to the surplus disposed of by the tenant tithe buyer. It is not easy to estimate the budget of a tenant farmer

Bewley manor and had holdings in Wolviston (Billingham parish) is uncertain: *Priory Rentals*, ed. Lomas and Piper, pp. 104, 107–8.

¹⁶ R. A. Lomas, 'Developments in Land Tenure on the Prior of Durham's Estate in the Later Middle Ages', *Northern History* 13 (1977), 35–6. See above, p. 39.

¹⁷ *Priory Rentals*, ed. Lomas and Piper, pp. 170–1.

¹⁸ B. Dodds, 'Managing Tithes in the Late Middle Ages', *Agricultural History Review* 53 (2005), 130–1.

because of the unknown level of household consumption and the unquantifiable value of household labour. However, for demonstration purposes, the role of tithe in the budget of a demesne lessee may be modelled assuming all the grain produced was marketed and labour was hired. The model is based on data compiled by Lomas from a series of accounts from the manor of Elvethall next to Durham city, belonging to the priory hostiller. This manor was kept in hand throughout the fifteenth century and run as an exclusively arable enterprise. In fact, the hostiller did not pay tithe on the corn from Elvethall because the manor lay in his appropriated parish of Durham St Oswald.¹⁹ However, in the absence of more detailed information on the budgets of tenant farmers in the fifteenth century, Elvethall can be used to estimate the impact of tithe purchase on the availability of disposable surplus. The method is set out in table 25.

Table 25. Tenant farmer budget modelled using data from Elvethall, 1491–2

Value of 1491 harvest:	£70 18s. 6½d.
Deductions	
Seed corn:	£13 19s. 5½d.
Cash costs (wages, maintenance, oxen and horses):	£25 11s. 7½d.
Grain liversies to reeve and <i>famuli</i> :	£5 0s. 6d.
Coal liversies:	£0 4s. 0d.
Payment of lease (estimated using Houghall):	£13 6s. 8d.
Tithe:	£7 1s. 10¼d.
	TOTAL £65 4s. 1¼d.
INCOME AFTER DEDUCTIONS	£5 14s. 5¼d.
Value of tithe:	£7 1s. 10¼d.
Estimated purchase price of tithe:	£6 0s. 6¾d.
Estimated profit on tithe:	£1 1s. 3½d.
Profit on tithe equal to 19 per cent of income after deductions.	

Source: R. A. Lomas, 'A Northern Farm at the End of the Middle Ages: Elvethall Manor, Durham, 1443/4–1513/14', *Northern History* 18 (1982).

It is very difficult to produce accurate estimates of many of the factors in table 25. For example, the costs of labour are underestimated because various payments in kind were made at certain points during the year, such as beer and cheese given to harvesters, the value of which is not known. Inclusion of these payments would raise the significance of the tithe. Furthermore, the relative value

¹⁹ R. A. Lomas, 'A Northern Farm at the End of the Middle Ages: Elvethall Manor, Durham, 1443/4–1513/14', *Northern History* 18 (1982).

of tithe corn and tithe purchase price is not known. As described above, unlike an external buyer, the manager of the leased demesne would have no tithe collection costs when he bought the tithe of the demesne he was cultivating himself. In this example, it has been estimated that the tithe buyer paid 85 per cent of the value of the tithe. Other evidence suggests that the percentage profit on tithe purchase was often considerably higher than this, in which case the income from the tithe purchase would play an even more significant role in the farm's budget.²⁰

Moreover, the model in table 25 applies to a leased demesne run in a certain way: production was highly specialised, all the produce was sold and the labour was paid for. However, such specialised farms were by no means universal.²¹ It is likely that some of the tenant tithe buyers of the fifteenth century operated very different kinds of enterprise. Many of the tenants in the Tyne Tees region must have taken advantage of opportunities for livestock-farming and, in some cases, industrial activities such as mineral extraction. Tithes would have had to be paid, and were possibly bought by the tenants themselves, on these other products. Equally, a family-run enterprise, especially one producing a range of goods, is likely to have consumed an unknown part of its own produce, meaning a smaller proportion of grain would be available for sale. This would raise further the importance of the bought tithe as a proportion of the saleable surplus. However, a considerable portion of work on the farm would have been performed by unpaid family members, meaning not all labour costs would have to be defrayed by the sale of produce. This would reduce the importance of the bought tithe as a part of net cash income. It must be emphasised, therefore, that the model presented in table 25 only provides the most general guideline for the importance of tithe purchase on a similar sized holding leased by a wealthy peasant family.

Accepting these difficulties, table 25 suggests that, in the case of a highly specialised demesne farm at least, tithe purchase yielded the equivalent of one-fifth of the farm's net income. The importance of income from tithe purchase must have been even greater in the budget of other types of holding and rather less in others. For the table 25 example at least, there are twenty-four other years between 1447 and 1505 for which these calculations can be made using Lomas's data. In seven of these, outgoings appear to have exceeded income. This reinforces the low margin of profitability at which a commercialised arable operation ran in this period.²² In the other seventeen years for which data are available, the profit made on tithe purchase was sometimes the equivalent of as little as 7 per cent or as much as 81 per cent of income. In one year, the profit on the bought tithe was worth more than the net income before tithe purchase (1453).

Another important factor in the purchase of tithes by tenants, not taken into account by this model, is the effect of variation in price over the course of the year. The peasant farmer disposing of a very small surplus on the market faced the problem that cash payments were required soon after the harvest when prices

²⁰ B. Dodds, 'Estimating Arable Output Using Durham Priory Tithe Receipts, 1341–1450', *Economic History Review* 57 (2004), 255–6, 276–7.

²¹ C. Dyer, 'Were There Any Capitalists in Fifteenth-Century England?' in *Enterprise and Individuals in Fifteenth-Century England*, ed. J. Kermode (Stroud, 1991), pp. 10–13, 16.

²² For comparison see: *Ibid.*, pp. 13–14.

were low.²³ Cultivators with greater marketable surpluses were able to store their corn and sell it later in the year when prices were higher.²⁴ It has been argued in chapter 6 that Durham tenant farmers enjoyed some flexibility in the time at which they paid rents, permitting them to maximise the price at which they sold grain. The purchase of the tithe would have further increased the proportion of the producer's output which he was able to sell when he judged prices to be favourable since payments for the purchase of tithe corn were not required until several months after the harvest.²⁵ It is presumably for this reason that tithe purchasers leased extra grain storage facilities. For example, a 3s. payment was made by John Denom for the Coatsay Moor tithe barn in 1495; he and three associates bought the tithes from this manor.²⁶ In other words, the purchase of tithes by the tenant not only increased the amount of grain available for sale but the system of payment for this grain meant he enjoyed profitable flexibility in its disposal.

In some cases, payment for tithe corn was simply subsumed into the cost of the lease of the manor. This applied, for example, when the bursar leased the manor of Westoe to the tenants of the same township in 1449–50.²⁷ However, the importance of tithe purchase in the Elvethall model outlined above suggests there may have been considerable negotiation over the value of tithe even when it was subsumed in a lease payment. This is also indicated by the fact that, although the number of tithe buyer tenants increased over the fourteenth and fifteenth centuries, it was by no means certain that the lessee of the manor, or prominent local tenants, would automatically win the bidding to buy the tithe.²⁸ In 1495–6, for example, Hesleden manor was leased by William Brown but the tithe was bought by John Boltby, not a tenant of the bursar listed in the rental of the same year.²⁹ Other prominent buyers included parish vicars, for whom collection costs were presumably reduced because of their familiarity with those paying the tithes, and local noble and ecclesiastical households, perhaps reducing costs by sourcing grain locally.³⁰ Both groups were significant purchasers of tithes in other parts of the country also.³¹

The presence of people who were not priory tenants in the lists of tithe buyers does not diminish the fact that the tenant tithe buyer became increasingly common over the course of the late middle ages. This is related to the impact of economic change on the arable sector and, most importantly, it sheds light on the ways in which grain producers responded to this change.

²³ See above, p. 155.

²⁴ R. H. Britnell, *The Commercialisation of English Society, 1000–1500* (Manchester, 1996), p. 122.

²⁵ Dodds, 'Managing Tithes', 126.

²⁶ *Priory Rentals*, ed. Lomas and Piper, p. 171.

²⁷ DCM, bursar's account 1449–50, *Wyvestowe* [rents].

²⁸ For a discussion of the range of individuals buying tithes in the late middle ages see: R. N. Swanson, 'Mr 10 Per Cent: Tithes and Economic Agency', in *Rural Society and Agriculture in the Late Middle Ages*, ed. R. H. Britnell and B. Dodds (forthcoming).

²⁹ *Priory Rentals*, ed. Lomas and Piper, p. 157.

³⁰ Dodds, 'Managing Tithes', 135–7.

³¹ For the importance of clergy as tithe buyers in Exeter see: Kowaleski, 'Grain Trade', p. 37. For gentry using tithe purchase as a means of household supply, see: Dyer, *Age of Transition*, p. 102.

Producers and the market

It is well known that the rising cost of labour and falling prices reduced the profitability of arable farming from the final quarter of the fourteenth century. The impact of these changes has been discussed at length in chapters 4 and 5. Arable farming became less attractive to producers and there is evidence of some reallocation of resources to other activities. However, grain production remained a major activity in the countryside and sharp market orientation was one way of remaining economically afloat in difficult circumstances. Dyer has used other types of evidence to point out this characteristic feature of certain groups in the fifteenth-century countryside, especially demesne lessees.³² The purchase of tithes was one way in which producers could maximise the quantity of grain available to dispose of on the market. As grain prices fell, outsiders withdrew from tithe purchase and the producers availed themselves of this opportunity to increase profits. In other words, tithe purchase was one way in which the supply chain between grain producer and consumer was shortened during a period of high costs and low returns.

Evidence for the way in which institutions supplied themselves with grain supports the idea that producers played a greater role in the grain market during the fifteenth and sixteenth centuries. Threlfall-Holmes has observed that Durham Priory relied on its own tenants to procure grain supplies for the convent. She emphasised the importance of 'goodwill and personal relationships' in explaining this system but it could also be significant that grain was increasingly supplied by producers during this period anyway.³³ This suggestion is supported by Lee's evidence of the identity of the suppliers of grain to Cambridge colleges during the late fifteenth and early sixteenth centuries. They included not only gentry and yeoman farmers but also husbandmen with holdings of thirty or forty acres.³⁴

The role of tithe purchase in the economy of the tenant farmer might have been particularly prominent in the Durham region because, as is suggested above, tithe purchase was made easier by village and parish structure. Even if this proves to have been the case, however, grain producers' involvement in buying tithes was not restricted to the Tyne Tees region. For example, the tithes of the township of Singleborough and the demesne of adjacent Great Horwood (Buckinghamshire) were leased to various local tenants, some of them husbandmen, during the fifteenth century.³⁵ It appears, therefore, that the Durham tithe purchase evidence may reflect a wider response to economic trends.

The extent to which increasing purchase of tithes by tenants represented deeper and more fundamental shifts in the priorities and attitudes of producers should not be exaggerated. It is true that tithe purchase must have required considerable negotiation and market awareness, reflected in competitive bidding. For example, during the 1490s the corn tithes of North Pitlington were bought in a number of years by a tenant of the township, but they were also bought by the

³² Dyer, 'Capitalists', pp. 11–14; Dyer, *Age of Transition*, pp. 194–210.

³³ Threlfall-Holmes, *Monks and Markets*, pp. 136–61.

³⁴ J. S. Lee, *Cambridge and its Economic Region, 1450–1560* (Hatfield, 2005), pp. 162–3.

³⁵ I am grateful to Mr Matthew Tompkins of Leicester University for providing me with a list of Great Horwood tithe lessees.

vicar of Pitlington and someone called Ingram Dawson whose connection with the township is not known.³⁶ It looks like these various parties were in competition to secure the purchase of the North Pitlington tithes each year. Yet, even if the wealthy tenant farmers and syndicates who often bought tithes were new features in the Durham countryside at the end of the middle ages, market awareness and involvement were not. Nor were these characteristics restricted to the larger producers. Even before the Black Death and the increase in the number of multiple holdings, tithe payers seem to have responded more sharply to price changes than managers of Durham Priory manorial demesnes in the same areas. During the late fifteenth and early sixteenth centuries, the tenants of Billingham parish, where the townships had not yet been leased *en bloc*, modified their grain production according to market signals. The purchase of tithes by wealthy tenant farmers shows the same type of calculated decision-making demonstrated by their forebears, and humbler neighbours, in their production strategies.

It is also true that only a small proportion of Durham villagers entered the ranks of wealthy tenant farmers, joining syndicates to lease townships and bidding for tithe purchase. Many other peasants retained small holdings, either in the townships which were not leased to syndicates, or through subleases. Many must have chosen to work as waged labourers on the large holdings of wealthier farmers and demesne lessees.³⁷ If the wealthy tenant tithe buyers manifested economic awareness then so too did the smallholders and waged labourers. In a period of high real wage levels, when working for money meant avoiding, or alleviating, the struggle of maintaining a holding in difficult economic conditions, taking this route might not have represented failure. In fact, it could be regarded as a logical, and economically highly sensible, decision.

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The Durham tithe buyer evidence reveals changes in the commercialisation of grain production. During the 1320s and 1330s, urban merchants were able to take advantage of economic circumstances and profit from tithe purchase. In the late fifteenth century, the place of such merchants had been taken by wealthy tenant farmers and syndicates of tenants who used tithe purchase to widen profit margins in a difficult economic climate. Whilst these changes were important and must have affected the day-to-day lives of the inhabitants of the countryside, it is argued here that they reflect changing circumstances rather than fundamental shifts in the attitudes of the producers themselves. Market-oriented decision-making did not emerge with the wealthy tenant tithe buyers at the end of the middle ages, it simply manifested itself in different ways from one period to the next and among the various groups in the countryside.

³⁶ *Priory Rentals*, ed. Lomas and Piper, p. 154.

³⁷ P. R. Schofield, *Peasant and Community in Medieval England 1200–1500* (Basingstoke, 2003), pp. 125–6. For Durham examples see Lomas, 'Land Tenure', 42.

Conclusion

This study has addressed three interrelated aspects of the late medieval rural economy, all of which feature prominently in the work of both the *Annalistes* and historians in Britain and the United States. The first is the relationship between population and production. Limits on output have been regarded as one of the defining features of pre-industrial economies, producing the celebrated cycles of growth and decline. The second is the relationship between grain production and other sectors of the economy, including other forms of agricultural output and other economic activities such as trade and the mineral extraction industries. Finally, and underpinning the first two areas, is the issue of the responsiveness of peasants and other producers to economic change and, in particular, to market signals.

Le Roy Ladurie famously used tithe and demographic data in his study of the Languedoc to demonstrate the operation of the 'great agrarian cycle'. Population and production expanded together until the limits of output were reached, bringing an end to population growth. Pressure on resources did affect the development of the rural economy in parts of England at certain times in this period, especially in the early fourteenth century. In Durham, however, no such pressure existed. Population and production both collapsed long before the limits of expansion were reached. War drained communities of money and men and the threat of destruction by raiders constrained recovery. Exceptionally bad harvests reduced the food supply to starvation levels. Neither the disasters of the 1310s and 1320s nor the Black Death can be regarded as Malthusian checks. The first afflicted a growing economy, with scope for further expansion, and the second ravaged a society already weakened and depleted. Nor did the abundance of resources after the Black Death lead automatically to demographic growth. Even as good lands were made available and the spectre of war receded, the post-Black Death boom did not last long enough to see sustained demographic recovery and the late fourteenth and fifteenth centuries brought further phases of decline. The roots of the non-recovery are hidden, and similar circumstances seem to have produced very different demographic trends elsewhere in Europe, but the continued serious impact of epidemic disease is likely to have been important in Durham.

The performance of other sectors of the rural and urban economies is shadowy by comparison with the illumination the tithe data give to the arable sector but some of the outlines of development can be discerned. Long-term expansion in arable production in the region up to the early fourteenth century coincided with the growth of towns and the development of a network of market centres. However, the scale of the growth of aggregate grain production suggests it was sustained by population growth in the countryside since the urban sector was

never large enough to absorb more than a small proportion of output. Much later, the flickerings of urban and industrial growth in the late fifteenth and early sixteenth centuries were too feeble to permit expansion in the countryside.

Following the curtailment of the growth of arable production in the early fourteenth century, the non-arable, industrial and urban sectors of the economy did not always follow the same phases of recovery, stability and renewed decline as grain output. The pastoral sector, often only visible through the distorting prism of export data, sometimes seems to have afforded relief to some groups in periods of insecurity or low grain prices but in the mid-fifteenth century demand for wool and animal products fell too. The non-agricultural, industrial and urban sectors offered opportunities to a minority of the inhabitants of the Tyne Tees region throughout the period. The South Shields fishermen, for example, enjoyed a long phase of prosperity after the Black Death. Yet for many, the benefits of the non-agricultural sectors must have been confined to the occasional chance find of a porpoise on the beach or an illegal but remunerative expedition with the dogs to the lord's rabbit warren.

Powerful exogenous forces played a major role in shaping the history of the rural economy in the Tyne Tees region but this does not mean producers were indifferent and unresponsive. If the religious concerns of the peasants of the Languedoc left them with little energy to devote to modifying their agricultural practices, the Durham peasants and larger tenant farmers did not have the same preoccupations. The clearest example of agency afforded by this study is the positive response of grain producers to the post-Black Death boom in grain prices. Instead of retreating into subsistence production, peasants adopted new techniques and expanded output to meet the demands of the market. Even in more normal circumstances, Durham peasants were able to make adjustments to arable output in response to market demand.

Like in other areas of the kingdom, it is clear that there was a process of polarisation in the Durham villages at the end of the middle ages. Wealthy tenants played an increasing role as land became more readily available. Holdings emerged which must have been more completely integrated in markets for produce and labour than those usually associated with 'peasants'. The managers of these larger holdings availed themselves of the opportunity to buy tithes, a logical step taken to remain economically afloat in difficult circumstances. Others did not take on the responsibility of a large holding but earned a living through well-paid wage labour. These developments represented major changes in the rural economy but do not reflect a fundamental shift in attitudes. The maximisation of marketable surpluses through tithe purchase was a response to economic conditions based on awareness of the market, just like the price-responsive cropping of peasant predecessors and neighbours.

To some extent, producers' capacity to respond to the market arose from the flexibility of agricultural practices in the Durham villages. Land was never in such short supply as in some areas further south and, consequently, holdings were probably larger and access to pasture easier. The burden of labour services was not so great as in some other areas. However, regional differences should not be exaggerated. The crop mix in lowland Durham suggests fertile land, unlike the highland regions where it was so difficult to grow cereals other than oats. The

history of the region had produced unusual features of tenure not encountered further south but, in the lowland parishes at least, the system of landholding was not unrecognisably different. Although a very long way from London, the Tyne Tees region was relatively densely urbanised, certainly by comparison with other peripheral areas such as the North-west. Even so specific a regional factor as the impact of war existed in comparable forms elsewhere in the kingdom with the pressures of recruitment and purveyance. Certainly Durham never experienced a high pressure rural economy like East Anglia and parts of the Home Counties before the Black Death but there were many other parts of Britain and continental Europe where resources were relatively abundant too.

The priorities and outlook of the Durham producers in the middle ages which emerge from this study do not appear to have been a constraint on the economic development of the region. Peasant cultivators were not imprisoned in a subsistence-oriented economy, uninterested in responding to the incentives of the market. Nor were surpluses always too small or the organisation of the agricultural economy too rigid to prevent them from responding positively to the demands of the market. There is no sense in which peasant psychology represented a limitation on aggregate output. However, the possibility of more severe material constraints on peasant production in other circumstances is certainly not ruled out by the Durham evidence. Other studies, not least among which is Le Roy Ladurie's work on the Languedoc so often referred to here, have indicated that peasants failed to respond to demand in regional economies different to that of the Durham region. The identification of a negative peasant response to prices in highly-pressured rural economies would be of great importance. Dynamic though the agency of producers was in their response to economic change, it is possible that aggregate output did not always respond positively to changes in demand. One way in which this possibility can be tested, and its impact assessed, is through more work on tithe. Although by no means exhaustive, this study has provided some pointers in the ways in which tithe data of various kinds might be used when good series come to light elsewhere.

Appendix: Estimating output using receipts from tithes sold for cash

The basic method by which receipts from tithes sold for cash are turned into estimates of grain output is described in chapters 1 and 2. This appendix deals with the technical aspects of estimating aggregate arable output in the Durham Priory parishes. The historiography of the method of deflating cash tithe receipt data has been described elsewhere and therefore the discussion here is confined to the method itself.¹ The first section deals with problems associated with indexing and the second examines the impact of a number of unknown factors on the series.

Indexing

The Durham monks collected tithes from around sixty different townships, combined in a variety of ways, but data do not survive from all these units for every single year. As a result, there are many separate series of cash tithe receipts from townships, or groups of townships, all with lots of gaps. This means aggregate income from tithes sold for cash calculated by summing all individual cash receipts for each year would be unrelated to fluctuations in the sale price of tithe corn because some townships would be included one year and excluded the next. The only solution to this problem is indexing, that is expressing each tithe receipt as a percentage of some earlier level. If the tithe receipt from each township for each year is expressed as an index then all the indices can be averaged annually and a series of comparable indices running from one year to the next is created. In order for the indices to be representative of cash tithe receipts throughout the Durham Priory parishes, only years for which ten or more individual receipts survive have been used in the series.² The annual average number of cash tithe receipts used to calculate the indices is over forty.

Indices require a base year. It is not possible to use just one fixed base year for the whole series since the combinations of townships from which tithe was collected change across this long period. Therefore, the series must be divided up into several shorter runs, each using a different base year, and then the shorter series calibrated so one final long run of figures is created, all indexed against a

¹ B. Dodds, 'Estimating Arable Output Using Durham Priory Tithe Receipts, 1341–1450', *Economic History Review* 57 (2004), 254–61, 276–7. The method used for the present study, and described in this appendix, has been further developed since that outlined in Dodds, 'Estimating Arable Output'.

² The only exception made was for 1270, from which only nine tithe receipts survive from the bursar's rent-roll: *Durham Cathedral Priory Rentals, 1: Bursar's Rentals*, ed. R. A. Lomas and A. J. Piper (Surtees Society 198, 1986), pp. 28–9. These were used to calculate an index because of the shortage of early data.

single base year. This calibration of the separate series was achieved by adapting a method developed by Langdon in his work on mill demography.³

Langdon's method is based not on base years but rather on indexing against previous years' receipts. For example, the index for 1300 might be fixed arbitrarily at 100. 1301 receipts may then be found to be 50 per cent of 1300 receipts. 1302 receipts may then be found to be 50 per cent of 1301 receipts, meaning they are the equivalent of 25 per cent of 1300 receipts. This method neatly avoids the need for a single base year but it is dependent upon large amounts of surviving data for each year. If, for example, only one tithe receipt survives from one year then the course of the whole of the subsequent series is determined by the level of that one receipt. In Langdon's work on mills, this problem is overcome by interpolation, a solution which can also be applied to the tithe receipts. Data might survive from a certain township for 1300 and 1310, for example, but not for the intervening years. In 1300 the tithe was sold for £20 and in 1310 it was sold for £5 and therefore tithe receipts for intervening years, which are unknown because of lack of surviving data, are assumed to lie on the line of linear progression between the two surviving receipts. Interpolation therefore means a large body of data can be provided for each individual year of the series, even though the actual survival of cash receipts from sold tithes is much patchier.

The problem with the interpolation method is that it has a smoothing effect on the trend of the series of cash tithe receipt indices. For example, if a receipt of £10 survives from a township in 1348 and one of £5 from the same township in 1360 then the process of interpolation will assume a linear fall in tithe receipts between 1348 and 1360. In fact, it is likely that there was a sharper fall in production between 1348 and 1350 than between 1358 and 1360 since 1349 saw the arrival of the Black Death. Langdon was able to allow for this smoothing effect in his analysis but arable output fluctuated much more sharply than numbers of mills.⁴ This smoothing effect is very undesirable for a series of arable output indicators because of the importance of examining the impact of various short-term crises.

Whilst Langdon's method cannot be used to obviate the need for base years in indexing the Durham cash tithe data, it can be used to calibrate several shorter series, each with its own base year. The cash tithe data were divided into four separate series with the following base years: 1291–5, 1364–6, 1388–90, 1421–3, 1473–5, 1486 and 1509. The first five base years are averages taken over three or four year periods, permitting the use of as much data as possible, given the changes in the townships, or combinations of townships, from which tithes were sold. This was not necessary for the final series because of greater consistency in the lists of townships from one year to the next. The use of the base year method preserves the responsiveness of the series of estimated output indicators to short-term crises. However, the eight series had to be put together to form one continuous series, by reindexing against one base year. This is difficult given the long periods between base years and the changing lists of townships over the

³ J. Langdon, *Mills in the Medieval Economy: England, 1300–1540* (Oxford, 2004), pp. 306–10. In the appendix, Langdon reproduced the computer programme he devised to perform the large number of calculations required. This was adapted for use with the Durham Priory cash tithe data.

⁴ *Ibid.*, pp. 25–31.

whole period. Simply indexing one base year against another would mean relying on receipts from the very small number of townships from which data survive for both base years. This reliance on very small samples of data would have a distorting effect on the relationship between one series and the next.

The two methods of indexing the cash tithe data both present problems. Langdon's method has an undesirable smoothing effect. The use of several base years creates the difficulty of reindexing to calibrate the series. The solution to these problems lies in combining the two methods. The sensitivity to crisis is preserved by dividing the long series into several shorter series, each with a separate base year. In order to put these shorter series together, Langdon's method was used to establish the relationship between the base years.

The changes in the units in which tithe was sold (i.e. the changing list of townships from which receipts survive from one year to the next) mean that no system of indexing permits the use of all the available tithe data. The method outlined here uses 86 per cent of the 8,016 usable sold tithe receipts collected from the Durham Priory accounting material. The indexing method has been thoroughly tested and would seem to be reliable for relatively large numbers of data. One of the drawbacks is that it is not easy to calculate separate series for smaller groups of townships, e.g. series for individual parishes. Indexing for smaller numbers of parishes produces results which can be heavily affected by the disappearance of one township from the record or the non-survival of a tithe receipt from one particular township in the base year. For this reason, the creation of cash tithe indices for areas smaller than all the Durham Priory parishes was restricted to groups of several parishes, as used in chapter 4.

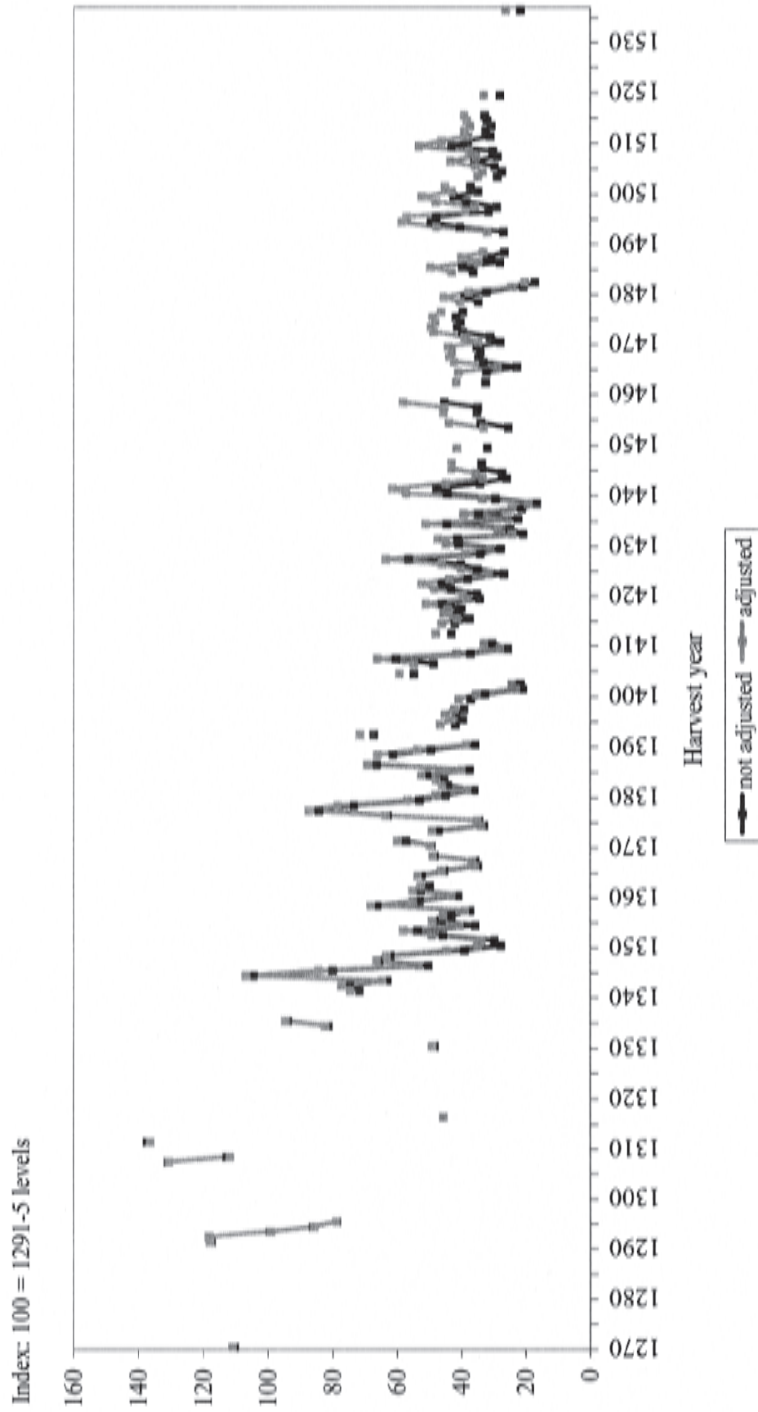
Unknown factors

In chapters 1 and 2 the process of deflation of cash receipts from sold tithes was described and a number of difficulties posed by the impact of unknown factors were raised. Collectively these unknowns represent the difference between the amount for which tithe corn was sold before the harvest and the actual value of the grain output of the tithe corn. They include profit made by the tithe buyer, the costs of tithe collection and processing met by the tithe buyer and interest rates. The influence of these factors is discussed at length elsewhere, and a sensitivity analysis has been performed, meaning the details do not need to be repeated here.⁵ However, this earlier study only covered the period 1341–1450 so the sensitivity analysis has been performed again for the longer series running from 1270–1536.

Some data survive on the cost of tithe collection and processing and estimates have been made of changing interest rates in the late middle ages but there are no data from Durham on the profits made by tithe buyers. For the purposes of speculative analysis, it has been assumed that the discount given the buyer on the value of the tithe grain output ranged from 1 to 25 per cent. Although some critics of the deflation method have suggested a wider range, attempts to estimate the difference using the Durham data from the fifteenth century suggest a narrower

⁵ Dodds, 'Estimating Arable Output', 254–7, 276–7.

Figure 19. Speculative analysis of the effect of changing tithe buyers' profits, collection and processing costs and interest payments on deflated cash tithe receipt indices, 1270–1536



Source: the unadjusted data are those used in figure 2. The basis for the adjustments is a speculative analysis described in the appendix.

one: 1 to 25 per cent seems a reasonable compromise. Moreover, each cash tithe index consists of many different transactions: some transactions may have been particularly profitable but these high levels of profit would be offset by other less profitable transactions made in the same year. The premise of the speculative analysis is to assume that the unknown factors of buyers' profit, collection and processing costs and interest payments had a maximum smoothing effect on the series. In other words, it is assumed that years of low cash tithe indices were years of the widest difference between the value of the tithe grain output and the sum paid by the purchaser. This is not, in fact, an unreasonable assumption given the increasing cost of labour (leading to higher discounts for collection and processing costs) and falling interest rates (reducing the amount paid by tithe buyers) across the period. Figure 19 shows the impact of these adjustments on deflated cash tithe indices. It appears that the unknown factors may lead the estimated output series to trend artificially downwards but the scale of this artificial trend does not offset the overall pattern of the series.⁶

The process of deflation depends on the use of price data since tithe buyers must have based their bids on estimates of the market value of the grain they would receive. It is impossible to work out what these estimates were and presumably buyers sometimes overestimated the value of the future grain output before harvest, which might explain the failure of some tithe buyers to make the required payments in the following year.⁷ However, purchase agreements were drawn up shortly before the harvest, meaning the tithe buyer would have a better idea of the likely price grain would fetch than, for instance, a farmer planting seed which would only be ready for sale several months later. Therefore current year prices were used for the purposes of deflating the cash tithe receipts: for the tithe of the harvest of 1434, price data from the period Michaelmas 1434 to Michaelmas 1435 were used. Price data from north-east England were used as far as possible, drawing on the data compiled by Beveridge's International Committee on Wages and Prices using the Durham Priory records.⁸ For years from which no Durham price data survive, other published prices from areas further south in England were used.⁹

The calculation of the price of an average quarter of tithe grain for deflating cash tithe receipts is complicated by changes in the composition of the tithe output. Indexed cash receipts from sold tithes were deflated by price indices but the calculation of price indices is affected by changing quantities of grain making up the average quarter. Relative production levels of wheat, barley, oats, peas and beans varied across the period as consumption patterns changed and the crops all sold for different prices which moved in similar, though not identical, ways. If the price indices used for the deflation of the indexed cash receipts from sold

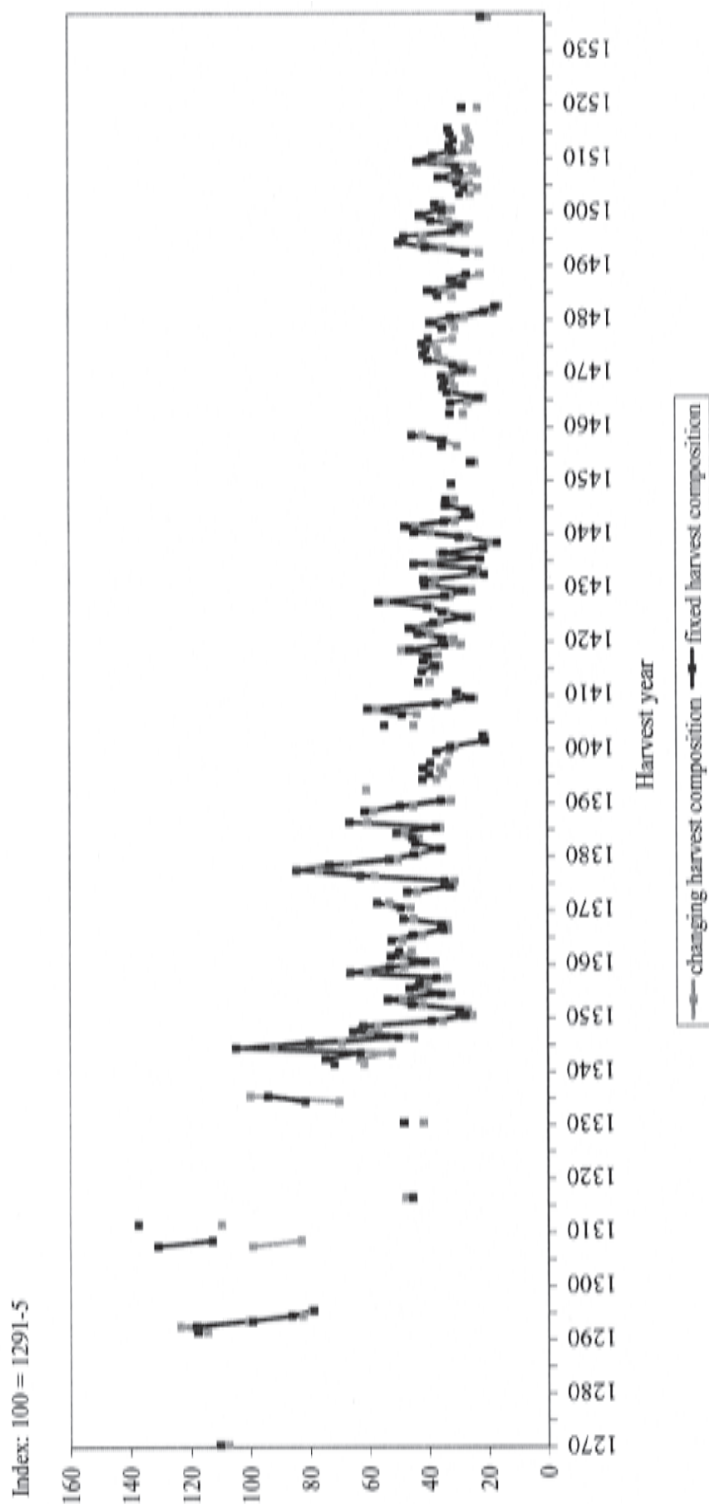
⁶ For a detailed discussion of these factors, including a diagrammatic explanation of the impact of the various unknown factors, see *Ibid.*

⁷ For tithe payments owed to the bursar and in arrears in 1428 and 1429 see DCM, Bursar's Book F, ff. 39r–v. For the Durham prior's failure to secure the payment for a tithe through the bishop's court, see C. M. Fraser, 'The Free Court of the Priors of Durham', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), p. 116.

⁸ Boxes C1, C2, C3, C4, C5, C6, C7, C8(i) and C8(ii), Beveridge Price History Archive (British Library of Political and Economic Science).

⁹ See above, p. xii.

Figure 20. Speculative analysis of the impact of changing harvest composition on the deflation of cash
tithes receipt indices, 1270–1536



Note: the changing harvest composition data are intended to test the impact of changing proportions of each grain on the harvest. The smallness of the sample on which these data are based, especially for the early part of the series, means they do not necessarily reflect actual changes. See appendix.

tithes do not reflect the changing composition of output then the output estimates will be distorted.¹⁰ For example, the role of an expensive grain, such as wheat, may increase as a proportion of total output. If the proportion of wheat used in the calculation of the price index by which the indexed cash tithe receipts are deflated is not adjusted accordingly then an artificial upward trend will be imparted to the output estimates. This is because the value of the cash receipts for the sold tithe will increase more than the number of quarters of tithe grain produced due to the greater importance of expensive wheat.

Grain tithe output data are not sufficiently abundant to provide details of annual changes in the composition of harvests throughout the period and in all the townships from which the data derive, meaning it is not possible to build this factor into the deflation process. The average grain price series used for figure 2 is based on 29 per cent wheat, 28 per cent barley, 30 per cent oats and 13 per cent legumes. These figures are derived from average proportions in surviving grain tithe receipts. Given that this sample is not necessarily representative, if the estimated output series is to be relied upon as indicative of real trends then some idea is needed of the possible distorting effect of varying production patterns of each crop. For the purposes of a speculative analysis, therefore, each surviving grain tithe output quantity was converted into a percentage of total output from that particular township and these percentages were averaged annually. The resulting series is made up of 2,059 individual grain tithe output quantities. It is important to recognise that this series of data does not necessarily represent actual shifts in the crops produced. Table 3 shows that soil type, proximity to markets, the role of livestock husbandry and so on meant that the composition of the harvest varied markedly from one township to the next and tithes were collected as corn from different townships from one year to the next.¹¹ Often the samples from which the annual averages were calculated are very small. This applies particularly towards the end of the period when only the tithes of Billingham parish were collected as corn. Also problematic is the complete lack of grain tithe output data from the mid-1340s until the 1370s.

Despite these problems, for the purposes of speculative analysis the series based on grain tithe receipts is as good as any other: it can at least be used to demonstrate the possible impact of the changing proportions of grain produced. Gaps in the data series were filled by assuming linear trends between the preceding and succeeding data points. No data at all survive from before 1299 so the data from this year were used to deflate the 1270–98 cash tithe indices. Figure 20 shows the impact of changing harvest composition on the estimated output indices. For the most part, the deflated cash tithe series is little affected by changes in the proportions of grain produced. The gradual increase in the relative importance of expensive wheat and barley during the fifteenth century means the estimated output indices calculated using variable harvest composition are slightly lower than those calculated using fixed proportions of grain. This trend in the grain output data, though based on a narrow sample, may reflect a genuine

¹⁰ For a discussion of these issues relating to the period 1341–1450 see Dodds, 'Estimating Arable Output', 258–9.

¹¹ B. Dodds, 'Managing Tithes in the Late Middle Ages', *Agricultural History Review* 53 (2005), 127–33.

shift in consumption towards the higher quality grains during a period of high per capita income. Even so, the difference between the two series is slight. Occasionally, the series based on variable harvest composition might be over 20 per cent lower than that based on fixed proportions, such as in 1307, 1308 and 1311. This reflects the very small samples on which the harvest compositions were estimated for these years, and therefore the very sharp fluctuation from one year to the next. It is not a reflection of a realistic margin of error for these early-fourteenth-century data since real changes in average harvest composition must have been much slower. For other years, when more data are available and changes in estimated harvest composition are more gradual, the average difference between the two series is much smaller.

It is notable that the effect of some unknown factors may have imparted a spurious downward trend to the series (figure 19) and the effect of others a spurious upward trend (figure 20). The suggestion that the two spurious trends offset each other is a deceptively easy solution to the problems of using tithe data, however, given the highly speculative methods with which the analyses of the impact of these factors have been carried out. There is no doubt that the influence of the unknown factors of collection and processing costs, buyer's profit, interest payments and the composition of the harvest disrupt the relationship between deflated cash tithe receipts and actual changes in arable output. Most importantly, however, the speculative analyses performed here demonstrate that these unknown factors do not render the process of deflation useless. They do not provide grounds for doubting the overall shape of the series, and in particular the long-term decline and stagnation of arable production. Nor are the unknown factors likely to have changed rapidly enough to preclude discussion of most shorter- and medium-term trends shown by the series.

Bibliography

Manuscript primary sources

Durham Cathedral Muniments

The tithe data were extracted from the monastic office holder and manorial accounts in DCM, medieval accounting material. These documents are listed in A. J. Piper, 'Muniments of the Dean and Chapter of Durham: Medieval Accounting Material' (Durham University Library Archives and Special Collections Searchroom Handlist, 1995). Most of the information given in this handlist is available on the Durham University Library Archives and Special Collections webpages at <http://flambard.dur.ac.uk/dynaweb/handlist/ddc/dcdmaccs/> (viewed November 2006).

See table 2 for the parishes from which individual office holders collected their tithe revenue.

DCM, prior's register II. Calendar available on the Durham University Library Archives and Special Collections webpages at <http://flambard.dur.ac.uk/dynaweb/handlist/ddc/dcdregr2/> (viewed November 2006).

DCM, Loc.XXI.20

DCM, Loc.XXVII.1

DCM, Miscellaneous Charter 3957

DCM, Cartulary 4. Calendar available on the Durham University Library Archives and Special Collections webpages at <http://flambard.dur.ac.uk/dynaweb/handlist/ddc/dcdcart4/> (viewed November 2006).

Other collections

North-eastern price data, collected from the Durham Priory records: Boxes C1, C2, C3, C4, C5, C6, C7, C8(i) and C8(ii), Beveridge Price History Archive (British Library of Political and Economic Science).

British Library MS Stowe 930.

Canterbury Cathedral Archives and Library, almoners' accounts.

Westminster Abbey Muniments, Kelvedon rectory accounts.

Printed primary sources

16. *Századi Dézsmajegyzékek [Sixteenth-Century Tithe Registers]*, ed. N. Kiss (Budapest, 1960).

Account Rolls of the Obedientiaries of Peterborough, ed. J. Greatrex (Northamptonshire Record Society 33, 1984).

The Accounts of the Chamberlains of Newcastle upon Tyne, 1508–1511, ed. C. M. Fraser (Society of Antiquaries of Newcastle upon Tyne Record Series 3, 1987).

Berger, J., *Once in Europa* (London, 1983).

- *Pig Earth* (London, 1979).
- Bishop Hatfield's Survey*, ed. W. Greenwell (Surtees Society 32, 1856).
- The Black Death*, ed. R. Horrox (Manchester Medieval Sources, 1994).
- Boldon Buke*, ed. W. Greenwell (Surtees Society 25, 1852).
- The Bolton Priory Compotus, 1286–1325: Together with a Priory Account Roll for 1377–78*, ed. I. Kershaw, D. M. Smith and T. N. Cooper (Yorkshire Archaeological Society Record Series 154, 2000).
- Calendar of the Close Rolls* (London, 1892–1963).
- Chapters of the English Black Monks: Documents Illustrating the Activities of the General and Provincial, Volume 1*, ed. W. A. Pantin (Camden Third Series 45, 1931).
- Chapters of the English Black Monks: Documents Illustrating the Activities of the General and Provincial, Volume 2*, ed. W. A. Pantin (Camden Third Series 47, 1933).
- The Chartulary of Brinkburn Priory*, ed. W. Page (Surtees Society 90, 1893).
- Churchwardens' Accounts of Pitlington and Other Parishes in the Diocese of Durham from A.D. 1580 to 1700*, ed. J. Barmby (Surtees Society 84, 1888).
- G. Clark, 'The Price History of English Agriculture, 1209–1914', available at <http://www.econ.ucdavis.edu/faculty/gclark/papers/Agprice.pdf> (viewed November 2006).
- The Customs Accounts of Newcastle upon Tyne 1454–1500*, ed. J. F. Wade (Surtees Society 202, 1995).
- Demographic Yearbook 2001*, United Nations Statistics Division, available at <http://unstats.un.org/unsd/demographic/products/dyb/dyb2.htm> (viewed November 2006).
- J. Dryden, *King Arthur*, ed. V. A. Dearing, vol. 16, *The Works of John Dryden* (Berkeley, 1996).
- Durham Cathedral Priory Rentals, 1: Bursar's Rentals*, ed. R. A. Lomas and A. J. Piper (Surtees Society 198, 1986).
- The Durham Household Book: or, the Accounts of the Bursar of the Monastery of Durham. From Pentecost 1530 to Pentecost 1534*, ed. J. Raine (Surtees Society 18, 1844).
- The English Manor c. 1200 – c. 1500*, ed. M. Bailey (Manchester Medieval Sources, 2002).
- Extracts from the Account Rolls of the Abbey of Durham: 1*, ed. J. T. Fowler (Surtees Society 100, 1898).
- Extracts from the Account Rolls of the Abbey of Durham: 2*, ed. J. T. Fowler (Surtees Society 99, 1899).
- Extracts from the Account Rolls of the Abbey of Durham: 3*, ed. J. T. Fowler (Surtees Society 103, 1901).
- Farmer, D. L., 'Prices and Wages [up to 1350]', in *The Agrarian History of England and Wales, 2: 1042–1350*, ed. H. E. Hallam (Cambridge, 1988), pp. 716–817.
- 'Prices and Wages, 1350–1500', in *The Agrarian History of England and Wales, 3: 1348–1500*, ed. E. Miller (Cambridge, 1991), pp. 431–525.
- Halmota Prioratus Dunelmensis Volume 1*, ed. W. H. D. Longstaffe and J. Booth (Surtees Society 82, 1889).
- Historiae Dunelmensis Scriptores Tres*, ed. J. Raine (Surtees Society 9, 1839).
- Historical Papers and Letters from the Northern Registers*, ed. J. Raine (Rerum Britannicarum Medii Aevi Scriptores 61, 1873).
- The Itinerary of John Leland in or about the Years 1535–1543 Vol. 1*, ed. L. Toulmin Smith (London, 1907).
- Langland's Piers Plowman*, ed. A. V. C. Schmidt (Oxford World's Classics, 1992).
- Medieval Handbooks of Penance: a Translation of the Principal 'Libri Poenitentiales' and Selections from Related Documents*, ed. J. T. McNeill and H. M. Gamer (New York, 1990).

- Northern Petitions Illustrative of Life in Berwick, Cumbria and Durham in the Fourteenth Century*, ed. C. M. Fraser (Surtees Society 194, 1981).
- The Pipe Roll of the Bishopric of Winchester, 1301–2*, ed. M. Page (Hampshire Record Series 14, 1996).
- The Pipe Roll of the Bishopric of Winchester, 1409–10*, ed. M. Page (Hampshire Record Series 16, 1999).
- Polychronicon Ranulphi Higden Monachi Cestrensis: Together with the English Translations of John Trevisa and of an Unknown Writer of the Fifteenth Century*: 9, ed. J. Rawson Lumby and C. Babington (*Rerum Britannicarum Medii Aevi Scriptores* 41, 1886).
- The Priory of Coldingham: the Correspondence, Account Rolls, Inventories and Law Proceedings*, ed. J. Raine (Surtees Society 12, 1841).
- The Priory of Finchale: the Charters of Endowment, Inventories and Account Rolls*, ed. J. Raine (Surtees Society 6, 1837).
- Richard D'Aungerville of Bury: Fragments of His Register and Other Documents*, ed. G. W. Kitchin (Surtees Society 119, 1910).
- Rites of Durham*, ed. J. T. Fowler (Surtees Society 107, 1902).
- Simeon of Durham: a History of the Kings of England*, ed. J. Stevenson (Lampeter, 1987).
- Symeon of Durham: Libellus De Exordio Atque Procursu Istius, Hoc Est Dunhelmensis, Ecclesie: Tracts on the Origins and Progress of This the Church of Durham*, ed. D. W. Rollason (Oxford, 2000).
- Taxatio Ecclesiastica Angliae Et Walliae Auctoritate P. Nicholai IV Circa A.D. 1291*, ed. T. Astle, S. Ayscough and J. Caley (London, 1802).
- Thomas Walsingham Historia Anglicana: 1*, ed. H. T. Riley (*Rerum Britannicarum Medii Aevi Scriptores* 28, 1863).
- The Valuation of Norwich*, ed. W. E. Lunt (Oxford, 1926).
- The Volume of Trade in English Wool and Cloth, 1280–1547*, ed. M. Bonney, available at the European State Finance Database as filename \mmb\einm001.txt, <http://www.le.ac.uk/hi/bon/ESFDB/MMB/mmb.html> (viewed November 2006).

Secondary sources

- Álvarez Vázquez, J. A., 'Evolución de los Arrendamientos Agrícolas de 1450 a 1850 en Zamora', in *Congreso de Historia Rural, Siglos XV al XIX: Actas del Coloquio Celebrado en Madrid, Segovia y Toledo del 13 al 16 Octubre de 1981* (Casa de Velazquez, Universidad Complutense de Madrid, 1984), pp. 613–624.
- Appleby, A. B., 'Disease or Famine? Mortality in Cumberland and Westmorland, 1580–1640', *Economic History Review* 26 (1973), 403–432.
- Askari, H., and J. T. Cummings, *Agricultural Supply Response: a Survey of the Econometric Evidence* (New York, 1976).
- 'Estimating Agricultural Supply Response with the Nerlove Model: a Survey', *International Economic Review* 18 (1977), 257–292.
- Austin, D., *The Deserted Medieval Village of Thrislington, County Durham: Excavations 1973–74* (Lincoln, 1989).
- Baehrel, R., *Une Croissance: La Basse-Provence Rurale, Fin 16e Siècle-1789* (Paris, 1961).
- Bailey, J., *General View of the Agriculture of the County of Durham* (London, 1810).
- Bailey, M., 'Coastal Fishing off South-East Suffolk in the Century after the Black Death', *Proceedings of the Suffolk Institute of Archaeology (& History)* 37 (1990), 102–114.

- 'Demographic Decline in Late Medieval England: Some Thoughts on Recent Research', *Economic History Review* 49 (1996), 1–19.
- 'Peasant Welfare in England, 1290–1348', *Economic History Review* 51 (1998), 223–251.
- 'The Rabbit and the Medieval East Anglian Economy', *Agricultural History Review* 36 (1988), 1–20.
- Baker, A. R. H., 'Evidence in the 'Nonarum Inquisitiones' of Contracting Arable Lands in England During the Early Fourteenth Century', *Economic History Review* 19 (1966), 518–532.
- Banaji, J., 'Summary of Selected Parts of Kautsky's 'The Agrarian Question'', *Economy and Society* 5 (1976), 2–49.
- Barlow, F., *Durham Jurisdictional Peculiarities* (Oxford, 1950).
- Bean, J. M. W., 'Plague, Population and Economic Decline in England in the Later Middle Ages', *Economic History Review* 15 (1962–3), 423–437.
- Béaur, G., 'From the North Sea to Berry and Lorraine: Land Productivity in Northern France, 13th - 19th Centuries', in *Land Productivity and Agro-Systems in the North Sea Area (Middle Ages – 20th Century): Elements for Comparison*, ed. B. J. P. van Bavel and E. Thoen (Turnhout, 1999), 136–167.
- Benedictow, O. J., *The Black Death, 1346–1353: the Complete History* (Woodbridge, 2004).
- Biddick, K., 'Medieval English Peasants and Market Involvement', *Journal of Economic History* 45 (1985), 823–831.
- Blake, J. B., 'The Medieval Coal Trade of North East England: Some Fourteenth-Century Evidence', *Northern History* 2 (1967), 1–26.
- Blanchard, I. S. W., 'Commercial Crisis and Change: Trade and the Industrial Economy of the North East, 1509–32', *Northern History* 8 (1973), 64–85.
- 'Labour Productivity and Work Psychology in the English Mining Industry, 1400–1600', *Economic History Review* 31 (1978), 1–24.
- 'The Miner and the Agricultural Community in Late Medieval England', *Agricultural History Review*, 20 (1972), 93–106.
- 'Population Change, Enclosure, and the Early Tudor Economy', *Economic History Review* 23 (1970), 427–445.
- 'Rejoinder: Stannator Fabulosus', *Agricultural History Review* 22 (1974), 62–74.
- Bloch, M., and L. Febvre, 'A Nos Lecteurs', *Annales d'Histoire Économique et Sociale*, 1 (1929), 1–2.
- Bois, G., *Crise du Féodalisme: Économie Rurale et Démographie en Normandie Orientale du Début du 14e Siècle au Milieu du 16e Siècle* (Paris, 1976).
- *The Crisis of Feudalism: Economy and Society in Eastern Normandy c. 1300–1550* (Cambridge, 1984).
- Bolton, J. L., 'Inflation, Economics and Politics in Thirteenth-Century England', in *Thirteenth Century England* 4, ed. P. R. Coss and S. D. Lloyd (Woodbridge, 1992), pp. 1–14.
- Bonney, M., *Lordship and the Urban Community: Durham and its Overlords 1250–1540* (Cambridge, 1990).
- Braudel, F., 'Histoire et Sciences Sociales: La Longue Durée', *Annales ESC* 13 (1958), 725–753.
- *La Méditerranée et le Monde Méditerranéen à l'Époque de Philippe II* (Paris, 1949).
- *The Mediterranean and the Mediterranean World in the Age of Philip II*, trans. S. Reynolds (London, 1975).

- 'Toward a Serial History: Seville and the Atlantic, 1504–1650', in *The Annales School: Critical Assessments*, ed. S. Clark (London, 1999), pp. 265–277.
- Bridbury, A. R., 'The Black Death', *Economic History Review* 26 (1973), 577–592.
- Briggs, C., 'Taxation, Warfare and the Early Fourteenth Century 'Crisis' in the North: Cumberland Lay Subsidies, 1332–1348', *Economic History Review* 58 (2005), 639–672.
- Britnell, R. H., 'Boroughs, markets and trade in northern England, 1000–1216', in *Progress and Problems in Medieval England*, ed. R. H. Britnell and J. Hatcher (Cambridge, 1996), pp. 46–67.
- *Britain and Ireland 1050–1530: Economy and Society* (Oxford, 2004).
- *The Commercialisation of English Society, 1000–1500* (Manchester, 1996).
- 'Feudal Reaction after the Black Death in the Palatinate of Durham', *Past and Present* 128 (1990), 28–47.
- 'Fields, Farms and Sun-Division in a Moorland Region, 1100–1400', *Agricultural History Review* 52 (2004), 20–37.
- 'The Towns of England and Northern Italy in the Early Fourteenth Century', *Economic History Review* 44 (1991), 21–35.
- Britton, C. E., *A Meteorological Chronology to A.D. 1450* (London, 1937).
- Broadbent, S. M., 'The Formation of Peasant Society in Central Colombia', *Ethnohistory* 28 (1981), 259–277.
- Burke, P., 'Reflections on the Historical Revolution in France: the *Annales* School and British Social History', in *The Annales School: Critical Assessments*, ed. S. Clark (London, 1999), pp. 284–294.
- Butcher, A., 'Rent, Population and Economic Change in Late-Medieval Newcastle', *Northern History* 14 (1978), 67–77.
- Butlin, R. A., 'Field Systems of Northumberland and Durham', in *Studies of Field Systems in the British Isles*, ed. A. R. H. Baker and R. A. Butlin (Cambridge, 1973), 94–144.
- Cabo Alonso, A., 'La Armuña y su Evolución Económica', *Estudios Geográficos* 58 and 59 (1955), 73–136, 367–427.
- Cabrera, E., 'The Medieval Origins of the Great Landed Estates of the Guadalquivir Valley', *Economic History Review* 42 (1989), 465–483.
- Campbell, B. M. S., 'The Agrarian Problem in the Early Fourteenth Century', *Past and Present* 188 (2005), 3–70.
- *English Seigniorial Agriculture, 1250–1450* (Cambridge, 2000).
- 'North-South Dichotomies, 1066–1550', in *Geographies of England: the North-South Divide, Material and Imagined*, ed. A. R. H. Baker and M. Billinge (Cambridge, 2004), pp. 145–174.
- Campbell, B. M. S., J. A. Galloway, D. Keene and M. Murphy, *A Medieval Capital and its Grain Supply: Agrarian Production and Distribution in the London Region c. 1300* (London, 1993).
- Carus-Wilson, E. M., and O. Coleman, *England's Export Trade, 1275–1547* (Oxford, 1963).
- Casado Alonso, H., 'Producción Agraria, Precios y Coyuntura Económica en la Diócesis de Burgos y Palencia a Fines de la Edad Media', *Studia Historica Historia Medieval* 9 (1991), 67–101.
- Casey, J., 'Structure et Développement de l'Agriculture de Valence à l'Époque Moderne, 1500–1700', in *Prestations Paysannes, Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1982), pp. 329–339.
- Charbonnier, P., 'Les Dîmes Auvergnates du XVe au XVIIIe Siècle', in *Les Fluctuations*

- du Produit de la Dîme. Conjoncture Décimale et Domaniale de la Fin du Moyen Âge au XVIIIe Siècle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1972), pp. 180–213.
- Chaunu, H., and P. Chaunu, *Séville et l'Atlantique, 1504–1650* (Paris, 1955).
- Chayanov, A. V., *The Theory of Peasant Economy* (Manchester, 1986).
- Cipolla, C. M., *Before the Industrial Revolution: European Society and Economy 1000–1700* (London, 1993).
- Clapham, J. H., 'Tithe Surveys as a Source of Agrarian History', *Cambridge Historical Journal* 2 (1924), 201–208.
- Clark, G., 'The Cost of Capital and Medieval Agricultural Technique', *Explorations in Economic History* 25 (1988), 265–294.
- Clemente Ramos, J., *La Economía Campesina en la Corona de Castilla (1000–1300)* (Barcelona, 2003).
- Cobb, R., 'Historians in White Coats', *The Times Literary Supplement* (3 December, 1971), 1527–1528.
- Cohn, S. K., *The Black Death Transformed: Disease and Culture in Early Renaissance Europe* (London, 2002).
- Constable, G., *Monastic Tithes: From their Origins to the Twelfth Century* (Cambridge, 1964).
- Cox, E. A., and B. R. Dittmer, 'The Tithe Files of the Mid-Nineteenth Century', *Agricultural History Review* 13 (1965), 1–16.
- Creighton, C., *A History of Epidemics in Britain*, 2 vols. (Cambridge, 1891–4).
- Cross, F. L., and E. A. Livingstone, eds., *The Oxford Dictionary of the Christian Church* (Oxford, 1997).
- Crossick, G., in *The Times Literary Supplement* (17 December, 1971), p. 1581.
- Daelemans, F., 'Tithe revenues in Rural South Western Brabant, Fifteenth to Eighteenth centuries' in *Productivity of land and agricultural innovation in the Low Countries (1250–1800)*, ed. H. Van der Wee and E. Van Cauwenberghe (Leuven, 1978), pp. 25–41.
- Daix, P., *Braudel* (Paris, 1995).
- De Vries, J., *The Dutch Rural Economy in the Golden Age, 1500–1700* (New Haven and London, 1974).
- Derville, A., *L'Agriculture du Nord au Moyen Âge: Artois, Cambrésis, Flandre Wallonne* (Villeneuve 'Ascq, 1999).
- Desaive, J.-P., 'Comptes Rendus des Séances et Débats', in *Prestations Paysannes, Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1982), pp. 781–795.
- Dobson, R. B., *Durham Priory, 1400–1450* (Cambridge, 1973).
- Dodds, B., 'Durham Priory Tithes and the Black Death between Tyne and Tees', *Northern History* 39 (2002), 5–24.
- 'Estimating Arable Output Using Durham Priory Tithe Receipts, 1341–1450', *Economic History Review* 57 (2004), 245–285.
- 'Managing Tithes in the Late Middle Ages', *Agricultural History Review* 53 (2005), 125–140.
- 'Patterns of Decline: Arable Production in England, France and Castile 1370–1450', *Rural Society and Agriculture in the Late Middle Ages*, ed. R. H. Britnell and B. Dodds (forthcoming).
- 'Peasants, Landlords and Production between the Tyne and Tees, 1349–1450', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), pp. 173–196.
- 'Workers on the Pittington Demesne in the Late Middle Ages', *Archaeologia Aeliana* 28 (2000), 147–161.

- Dunsford, H. M., and S. J. Harris, 'Colonization of the Wasteland in County Durham, 1100–1400', *Economic History Review* 56 (2003), 34–56.
- Durham County Local History Society, *An Historical Atlas of County Durham* (Durham, 1992).
- Dyer, A., 'Appendix: Ranking Lists of English Medieval Towns', in *The Cambridge Urban History of Britain, 1: 600–1540*, ed. D. M. Palliser (Cambridge, 2000), pp. 747–770.
- Dyer, C., *An Age of Transition? Economy and Society in England in the Later Middle Ages* (Oxford, 2005).
- 'Changes in Diet in the Late Middle Ages : the Case of Harvest Workers', *Agricultural History Review* 36 (1988), 21–37.
- 'Did the Peasants Really Starve in Medieval England?' in *Food and Eating in Medieval Europe*, ed. M. Carlin and J. T. Rosenthal (London and Rio Grande, 1998), pp. 53–72.
- *Lords and Peasants in a Changing Society: the Estates of the Bishopric of Worcester, 680–1540* (Cambridge, 1980).
- *Making a Living in the Middle Ages: the People of Britain 850–1520* (New Haven ; London, 2002).
- *Standards of Living in the Later Middle Ages: Social Change in England c. 1200–1520* (Cambridge, 1998).
- 'Were There Any Capitalists in Fifteenth-Century England?' in *Enterprise and Individuals in Fifteenth-Century England*, ed. J. Kermode (Stroud, 1991), pp. 1–24.
- Eiras Roel, A., ed., *Actas de las I Jornadas de Metodología Aplicada de las Ciencias Históricas; Metodología de la Historia Moderna: Economía y Demografía* (Santiago de Compostela, 1975).
- Ellis, F., *Peasant Economics: Farm Households and Agrarian Development* (Cambridge, 1993).
- Ennew, J., P. Hirst and K. Tribe, 'Peasantry' as an Economic Category', *The Journal of Peasant Studies* 4 (1977), 295–322.
- Evans, E. J., *The Contentious Tithe: the Tithe Problem and English Agriculture, 1750–1850* (London, 1976).
- Febvre, L., *The Problem of Unbelief in the Sixteenth Century: the Religion of Rabelais* (Cambridge, Mass., 1982).
- Fraser, C. M., 'The Free Court of the Priors of Durham', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), pp. 111–117.
- 'Gilly-corn and the custom of the Convent of Durham', *Archaeologia Aeliana* 33 (1955), 35–60.
- 'The Pattern of Trade in the North-East of England, 1265–1350', *Northern History* 4 (1969), 44–66.
- Fraser, C. M., and K. Emsley, *Tyneside* (Newton Abbot, 1973).
- Freidmann, H., 'Household Production and the National Economy: Concepts for the Analysis of Agrarian Formations', *The Journal of Peasant Studies* 7 (1980), 158–184.
- Galloway, J. A., 'Driven by Drink? Ale Consumption and the Agrarian Economy of the London Region, c.1300–1400', in *Food and Eating in Medieval Europe*, ed. M. Carlin and J. T. Rosenthal (London and Rio Grande, 1998), pp. 87–100.
- Gasquet, F. A., *Parish Life in Medieval England* (London, 1909).
- Gemmill, E., 'Appendix: Prices from the Durham Obedientary Account Rolls, 1278–1367', in *Rural Society and Agriculture in the Late Middle Ages*, ed. R. H. Britnell and B. Dodds (forthcoming).

- Goldberg, P. J. P., 'Mortality and Economic Change in the Diocese of York, 1390–1514', *Northern History* 24 (1988), pp. 38–55.
- *Women, Work, and Life Cycle in a Medieval Economy: Women in York and Yorkshire, c. 1300–1520* (Oxford, 1992).
- González Jiménez, M., *En Torno a los Orígenes de Andalucía: La Repoblación del Siglo XIII* (Seville, 1980).
- Goubert, P., 'Review of R. Baehrel 'Une Croissance ...'', *Economic History Review* 15 (1962–3), p. 397.
- Goy, J., 'Report. Part I', in *Proceedings of the Seventh International Economic History Congress*, ed. M. Flinn (Edinburgh, 1978), pp. 113–116.
- Goy, J., and E. Le Roy Ladurie, eds., *Les Fluctuations du Produit de la Dîme. Conjoncture Décimale et Domaniale de la Fin du Moyen Age au XVIIIe Siècle* (Paris, 1972).
- , eds., *Prestations Paysannes, Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle* (Paris, 1982).
- Gray, H. L., *English Field Systems* (Cambridge, Mass., 1915).
- Hadcock, R. N., 'A Map of Medieval Northumberland and Durham', *Archaeologia Aeliana* 16 (1939), 142–218.
- Halcrow, E. M., 'The Decline of Demesne Farming on the Estates of Durham Cathedral Priory', *Economic History Review* 7 (1954–5), 345–356.
- Hallam, H. E., 'The Climate of Eastern England 1250–1350', *Agricultural History Review* 32 (1984), 124–132.
- 'Rural England and Wales, 1042–1350', in *The Agrarian History of England and Wales, 2: 1042–1350*, ed. H. E. Hallam (Cambridge, 1988), pp. 966–1008.
- Hamilton, E. J., *Money, Prices, and Wages in Valencia, Aragon and Navarre, 1351–1500* (Cambridge, Mass., 1936).
- Hanawalt, B., *The Ties That Bound: Peasant Families in Medieval England* (Oxford, 1986).
- Harris, S. J., 'Wastes, the Margins and the Abandonment of Land: the Bishop of Durham's Estate, 1350–1480', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), pp. 197–219.
- Harriss, G., *Shaping the Nation: England 1360–1461* (Oxford, 2005).
- Hartridge, R. A. R., *A History of Vicarages in the Middle Ages* (Cambridge, 1930).
- Harvey, B. F., *Living and Dying in England, 1100–1540: the Monastic Experience* (Oxford, 1993).
- *The Obedientaries of Westminster Abbey and their Financial Records, c. 1275–1540* (Woodbridge, 2002).
- *Westminster Abbey and its Estates in the Middle Ages* (Oxford, 1977).
- Hatcher, J., 'A Diversified Economy: Later Medieval Cornwall', *Economic History Review* 22 (1969), 208–227.
- 'England in the Aftermath of the Black Death', *Past and Present* 144 (1994), 3–35.
- 'The Great Slump of the Mid-Fifteenth Century', in *Progress and Problems in Medieval England*, ed. J. Hatcher and R. H. Britnell (Cambridge, 1996), pp. 237–272.
- *The History of the British Coal Industry 1: Before 1700: Towards the Age of Coal* (Oxford, 1993).
- 'Mortality in the Fifteenth Century: Some New Evidence', *Economic History Review* 39 (1986), 19–38.
- 'Myths, Miners and Agricultural Communities', *Agricultural History Review* 22 (1974), 54–61.

- 'New Settlement: South-Western England', in *The Agrarian History of England and Wales*, 2: 1042–1350, ed. H. E. Hallam (Cambridge, 1988), pp. 234–245.
- *Plague, Population, and the English Economy, 1348–1530* (London, 1977).
- *Rural Economy and Society in the Duchy of Cornwall, 1300–1500* (Cambridge, 1970).
- 'Understanding the Population History of England 1450–1750', *Past and Present* 180 (2003), 83–130.
- Heath, P., 'North Sea Fishing in the Fifteenth Century: the Scarborough Fleet', *Northern History* 3 (1968), 53–69.
- Herlihy, D., *Medieval and Renaissance Pistoia: the Social History of an Italian Town, 1207–1430* (New Haven and London, 1967).
- Herlihy, D., and C. Klapisch-Zuber, *Tuscans and their Families: a Study of the Florentine Catasto of 1427* (New Haven, 1985).
- Hexter, J. H., 'Fernand Braudel and the Monde Braudellien', *Journal of Modern History* 44 (1972), 480–539.
- Hilton, R. H., *The English Peasantry in the Later Middle Ages: the Ford Lectures for 1973 and Related Studies* (Oxford, 1975).
- 'Medieval Market Towns and Simple Commodity Production', *Past and Present* 109 (1985), 3–23.
- 'Review of E. Le Roy Ladurie "Les Paysans ..."', *Economic History Review* 82 (1967), 791–795.
- Holt, S. B., 'A Note Concerning Russell's Estimate of the Population of Durham City in the Fourteenth Century', *Durham County Local History Society Bulletin* 22 (1978), 43–44.
- Hoppe, G., and J. Langton, *Peasantry to Capitalism: Östergötland in the Nineteenth Century* (Cambridge, 1994).
- Hoskins, W. G., 'Harvest Fluctuations and English Economic History, 1480–1619', *Agricultural History Review* 12 (1964), 28–46.
- *The Midland Peasant: the Economic and Social History of a Leicestershire Village* (London, 1957).
- Hunt, L., 'French History in the Last Twenty Years: the Rise and Fall of the *Annales* Paradigm', *Journal of Contemporary History* 21 (1986), 209–224.
- Hybel, N., 'The Grain Trade in Northern Europe before 1350', *Economic History Review* 55 (2002), 219–247.
- Jacquart, J., 'Review of E. Le Roy Ladurie "Les Paysans ..."', *Economic History Review* 20 (1967), 623.
- James, M., *Family, Lineage, and Civil Society: a Study of Society, Politics, and Mentality in the Durham Region, 1500–1640* (Oxford, 1974).
- Jansen, J. C. G. M., 'Tithes and the Productivity of Land in the South of Limburg, 1348–1790', in *Productivity of Land and Agricultural Innovation in the Low Countries (1250–1800)*, ed. H. Van der Wee and E. Van Cauwenberghe (Leuven, 1978), pp. 77–95.
- Jolliffe, J. E. A., 'Northumbrian Institutions', *English Historical Review* 161 (1926), pp. 1–42.
- Jones, E. L., 'Review of E. Le Roy Ladurie "The Territory of the Historian"', *Economic History Review* 32 (1979), 612–3.
- Kain, R., 'Les Dîmes, les Relevés de Dîmes et la Mesure de la Production Agricole Dans La Grande-Bretagne Préindustrielle', in *Prestations Paysannes, Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1982), pp. 713–732.

- Kain, R. J. P. and H. C. Prince, *The Tithe Surveys of England and Wales* (Cambridge, 1985).
- Kapelle, W. E., *The Norman Conquest of the North: the Region and its Transformation, 1000–1135* (London, 1979).
- Kerblay, B., 'Chayanov and the Theory of Peasant Economies', in *Peasants and Peasant Societies: Selected Readings*, ed. T. Shanin (Oxford, 1987), pp. 176–184.
- Kermode, J., 'Regional Surveys: (E) Northern Towns', in *The Cambridge Urban History of Britain, 1: 600–1540*, ed. D. M. Palliser (Cambridge, 2000), pp. 657–679.
- Kershaw, I., *Bolton Priory: the Economy of a Northern Monastery 1286–1325* (Oxford, 1973).
- 'The Great Famine and Agrarian Crisis in England, 1315–1322', *Past and Present* 59 (1973), 3–50.
- Knowles, D., *The Monastic Order in England: a History of Its Development from the Times of St. Dunstan to the Fourth Lateran Council, 943–1216* (Cambridge, 1963).
- Kowaleski, M., 'The Expansion of the South-Western Fisheries in Late Medieval England', *Economic History Review* 53 (2000), 429–454.
- 'The Grain Trade in Fourteenth-Century Exeter', in *The Salt of Common Life: Individuality and Choice in the Medieval Town, Countryside, and Church: Essays Presented to J. Ambrose Raftis*, ed. E. B. DeWindt (Kalamazoo, 1995), pp. 1–52.
- Kula, W., *An Economic Theory of the Feudal System: Towards a Model of the Polish Economy, 1500–1808* (London, 1976).
- Labrousse, C. E., *Esquisse du Mouvement des Prix et des Revenus en France au XVIIIe Siècle* (Paris, 1933).
- Ladero Quesada, M. A., 'Los Cereales En La Andalucía Del Siglo XV', *Revista de la Universidad de Madrid* 18 (1969), 223–240.
- Ladero Quesada, M. A., and M. González Jiménez, *Diezmo Eclesiástico y Producción de Cereales en el Reino de Sevilla, (1408–1503)* (Seville, 1979).
- Langdon, J., *Mills in the Medieval Economy: England, 1300–1540* (Oxford, 2004).
- Lapsley, G. T., *The County Palatine of Durham: a Study in Constitutional History* (New York, 1900).
- Larson, P. L., 'Local Law Courts in Late Medieval Durham', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), pp. 97–109.
- Le Roy Ladurie, E., *Montaillou: Cathars and Catholics in a French Village, 1294–1324*, trans. B. Bray (Harmondsworth, 1980).
- *Les Paysans de Languedoc* (Paris, 1966).
- *The Peasants of Languedoc*, trans. J. Day (Urbana, 1974).
- 'Peasants', in *The New Cambridge Modern History, 13: Companion Volume*, ed. P. Burke (Cambridge, 1979), pp. 115–163.
- 'Quantitative History: the 6th Section of the École Pratique des Hautes Études', in *The Territory of the Historian*, ed. E. Le Roy Ladurie, trans. B. Reynolds and S. Reynolds (Hassocks, Sussex, 1979), pp. 17–31.
- 'The Quantitative Revolution and French Historians: Record of a Generation (1932–1968)', in *The Territory of the Historian*, ed. E. Le Roy Ladurie, trans. B. Reynolds and S. Reynolds (Hassocks, Sussex, 1979), pp. 7–15.
- 'Tithes and Net Agricultural Output (Fifteenth to Eighteenth Century)', in *The Territory of the Historian*, ed. E. Le Roy Ladurie, trans. B. Reynolds and S. Reynolds (Hassocks, Sussex, 1979), pp. 193–202.
- 'Voies Nouvelles pour l'Histoire Rurale (XVIe – XVIIIe Siècles)', *Annales ESC* 20 (1965), 1268–1280.

- Le Roy Ladurie, E., and J. Goy, 'Première Esquisse d'une Conjoncture du Produit Décimal et Domanial Fin du Moyen Age–XVIIIe Siècle', in *Les Fluctuations du Produit de la Dîme. Conjoncture Décimale et Domaniale de la Fin du Moyen Age au XVIIIe Siècle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1972), pp. 334–374.
- 'Présentation', in *Les Fluctuations du Produit de la Dîme. Conjoncture Décimale et Domaniale de la Fin du Moyen Age au XVIIIe Siècle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1972), pp. 9–24.
- *Tithe and Agrarian History from the Fourteenth to the Nineteenth Centuries: an Essay in Comparative History* (Cambridge; Paris, 1982).
- Lee, J. S., *Cambridge and its Economic Region, 1450–1560* (Hatfield, 2005).
- Leijonhufvud, L., *Grain Tithes and Manorial Yields in Early Modern Sweden: Trends and Patterns of Production and Productivity, c. 1540–1680* (Uppsala, 2001).
- Letters, S., *Online gazetteer of markets and fairs in England and Wales to 1516* available at <http://www.history.ac.uk/cmh/gaz/gazweb2.html> (viewed March 2006).
- Leuilliot, P., 'Recent French Writings in the Social Economic History of Modern France', *Economic History Review* 2 (1949), 200–205.
- Lloyd, T. H., *Alien Merchants in England in the High Middle Ages* (Brighton, 1982).
- *England and the German Hanse, 1157–1611: a Study of their Trade and Commercial Diplomacy* (Cambridge, 1991).
- *The Movement of Wool Prices in Medieval England* (6, 1973).
- Lomas, R. A., 'The Black Death in County Durham', *Journal of Medieval History* 15 (1989), 127–140.
- 'Developments in Land Tenure on the Prior of Durham's Estate in the Later Middle Ages', *Northern History* 13 (1977), 27–43.
- 'The Impact of Border Warfare: the Scots and South Tweedside c. 1290–c. 1520', *Scottish Historical Review* 75 (1996), pp. 143–167.
- *North-East England in the Middle Ages* (Edinburgh, 1992).
- 'A Northern Farm at the End of the Middle Ages: Elvethall Manor, Durham, 1443/4 – 1513/14', *Northern History* 18 (1982), 26–53.
- 'The Priory of Durham and its Demesnes in the Fourteenth and Fifteenth Centuries', *Economic History Review* 31 (1978), 339–353.
- Lomas, T., 'South-East Durham: Late Fourteenth and Fifteenth Centuries', in *The Peasant Land Market in Medieval England*, ed. P. D. A. Harvey (Oxford, 1984), pp. 253–327.
- López Salazar, J., and M. Martín Galán, 'La Producción Cerealista en el Arzobispado de Toledo, 1463–1699', *Cuadernos de Historia Moderna y Contemporánea* 2 (1981), 21–103.
- Lorcin, M.-T., 'La Fraude des Décimables: Mouvement Court ou Mouvement Long?' in *Prestations Paysannes, Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1982), pp. 599–606.
- Lucas, C., 'Introduction', in *The Annales School: Critical Assessments*, ed. S. Clark (London, 1999), pp. 227–237.
- MacKay, A., 'Popular Movements and Pogroms in Fifteenth-Century Castile', *Past and Present* 55 (1972), 33–67.
- *Spain in the Middle Ages: From Frontier to Empire, 1000–1500* (London, 1977).
- Maddicott, J. R., 'The English Peasantry and the Demands of the Crown 1294–1341', in *Landlords, Peasants and Politics in Medieval England*, ed. T. H. Aston (Cambridge, 1987), pp. 285–359.
- Maitland, F. W., 'Northumbrian Tenures', *English Historical Review* 5 (1890), 625–32.

- Makkai, L., V. Zimányi, P. Bán and Z. Ujváry, 'Les Registres de Dîme, Sources de l'Histoire de la Production Agricole en Hongrie, 1500–1848', in *Prestations Paysannes, Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1982), pp. 93–119.
- T. R. Malthus: *an Essay on the Principle of Population*, ed. G. Gilbert (Oxford World's Classics, 1993).
- Masschaele, J., *Peasants, Merchants, and Markets: Inland Trade in Medieval England, 1150–1350* (New York, 1997).
- Mate, M., 'The Agrarian Economy of South-East England before the Black Death: Depressed or Buoyant?' in *Before the Black Death: Studies in the 'Crisis' of the Early Fourteenth Century*, ed. B. M. S. Campbell (Manchester, 1991), pp. 79–109.
- 'Pastoral Farming in South-East England in the Fifteenth Century', *Economic History Review* 40 (1987), 523–536.
- Mauro, F., 'Review of P. Goubert "Beauvais et le Beauvaisis"', *Economic History Review* 14 (1961–2), 359–360.
- McCloskey, D. N., and J. Nash, 'Corn at Interest: the Extent and Cost of Grain Storage in Medieval England', *American Economic Review* 74 (1984), 174–187.
- McClure, P., 'Patterns of Migration in the Late Middle Ages: the Evidence of English Place-Name Surnames', *Economic History Review* 32 (1979), 167–182.
- McNamee, C., *The Wars of the Bruces: Scotland, England and Ireland 1306–1328* (East Linton, 1997).
- Meuvret, J., ed., *2 Production et Productivité Agricoles: 3e Conférence Internationale d'Histoire Économique (Munich, 1965)* (Paris, 1968).
- Miller, E., 'Farming in Northern England During the Eleventh and Twelfth Centuries', *Northern History* 11 (1976), 1–16.
- 'New Settlement: Northern England', in *The Agrarian History of England and Wales, 2: 1042–1350*, ed. H. E. Hallam (Cambridge, 1988), pp. 245–259.
- Miller, E., and J. Hatcher, *Medieval England: Rural Society and Economic Change, 1086–1348* (London, 1978).
- Miller, E., and J. Hatcher, *Medieval England: Towns, Commerce and Crafts, 1086–1348* (London, 1995).
- Moerman, M., *Agricultural Change and Peasant Choice in a Thai Village* (Berkeley and Los Angeles, 1968).
- Morin, C., 'Le Mouvement du Produit Décimal et l'Évolution des Rapports Fonciers au Mexique, XVIIe–XIXe Siècles' in *Prestations Paysannes, Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1982), pp. 479–87.
- Morineau, M., 'Cambrésis et Hainaut: des Frères Ennemis?' in *Prestations Paysannes, Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1982), pp. 625–43.
- Munro, J., 'The "Industrial Crisis" Of the English Textile Towns, c. 1290–c.1330', in *Thirteenth Century England* 7, ed. M. C. Prestwich, R. H. Britnell and R. Frame (Woodbridge, 1999), pp. 103–142.
- Murray, A., *Reason and Society in the Middle Ages* (Oxford, 1985).
- Neveux, H., *Les Grains du Cambrésis (Fin du XIVe–Début du XVIIe Siècles). Vie et Déclin d'une Structure Économique* (Paris, 1980).
- Newman, C. M., 'Economy and Society in North-Eastern Market Towns: Darlington and Northallerton in the Later Middle Ages', in *North-East England in the Later Middle Ages*, ed. C. D. Liddy and R. H. Britnell (Woodbridge, 2005), pp. 127–140.
- *Late Medieval Northallerton: a Small Market Town and its Hinterland, c. 1470–1540* (Stamford, 1999).

- 'Work and Wages at Durham Priory and its Estates, 1494–1519', *Continuity and Change* 16 (2001), 357–378.
- Offler, H. S., 'Murder on Framwellgate Bridge', *Archaeologia Aeliana* 16 (1988), 193–211.
- Ormrod, W. M., 'The Crown and the English Economy, 1290–1348', in *Before the Black Death: Studies in the 'Crisis' of the Early Fourteenth Century*, ed. B. M. S. Campbell (Manchester, 1991), pp. 149–183.
- Orwin, C. S., and C. S. Orwin, *The Open Fields* (Oxford, 1967).
- Page, W., ed., *The Victoria History of the County of Durham*, 3 vols. (London, 1907–28).
- Palliser, D. M., 'Epidemics in Tudor York', *Northern History* 8 (1973), 45–63.
- Paquet, G., and J.-P. Wallot, 'Rentés Foncières, Dîmes et Revenus Paysans. Le Cas Canadien', in *Prestations Paysannes, Dîmes, Rente Foncière et Mouvement de la Production Agricole à l'Époque Préindustrielle*, ed. J. Goy and E. Le Roy Ladurie (Paris, 1982), pp. 749–61.
- Pérez Moreda, V., *Las Crisis de Mortalidad en la España Interior Siglos XVI–XIX* (Madrid, 1980).
- Phelps Brown, E. H., and S. Hopkins, 'Seven Centuries of the Prices of Consumables, Compared with Builders' Wage Rates', *Economica* 23 (1956), 296–314.
- Piper, A. J., 'Evidence of Accounting and Local Estate Services at Durham, c. 1240', *Archives* 20 (1992), 36–39.
- Pollard, A. J., 'The North-Eastern Economy and the Agrarian Crisis of 1438–40', *Northern History* 25 (1989), 89–105.
- *North-Eastern England During the Wars of the Roses: Lay Society, War, and Politics 1450–1500* (Oxford, 1990).
- Ponsot, P., 'Un Cas de Croissance Démographique Précocité: La Basse-Andalousie au XVe et au Début du XVIe Siècle', *Annales de Démographie Historique* (1980), 143–153.
- Poos, L., *A Rural Society after the Black Death: Essex 1350–1525* (Cambridge, 1991).
- Postan, M. M., 'The Fifteenth Century', *Economic History Review* 9 (1939), 160–167.
- 'Medieval Agrarian Society in its Prime: 7. England', in *The Cambridge Economic History of Europe, 1: the Agrarian Life of the Middle Ages*, ed. M. M. Postan (Cambridge, 1966), pp. 549–632.
- *The Medieval Economy and Society: an Economic History of Britain in the Middle Ages* (Harmondsworth, 1972).
- 'Some Economic Evidence of Declining Population in the Later Middle Ages', *Economic History Review* 2 (1950), 221–246.
- 'The Trade of Medieval Europe: the North', in *The Cambridge Economic History of Europe, 2: Trade and Industry in the Middle Ages*, ed. M. M. Postan and E. E. Rich (Cambridge, 1952), pp. 119–256.
- Pounds, N. J. G., *A History of the English Parish: the Culture of Religion from Augustine to Victoria* (Cambridge, 2000).
- Prestwich, M. C., *Plantagenet England, 1225–1360* (Oxford, 2005).
- *The Three Edwards: War and State in England, 1272–1377* (London, 1980).
- *War, Politics and Finance under Edward I* (London, 1972).
- Prince, H. C., 'The Tithe Surveys of the Mid-Nineteenth Century', *Agricultural History Review* 7 (1959), 14–26.
- Razi, Z., *Life, Marriage, and Death in a Medieval Parish: Economy, Society, and Demography in Halesowen, 1270–1400* (Cambridge, 1980).
- Rigby, S. H., *English Society in the Later Middle Ages: Class, Status and Gender* (London, 1995).

- Roberts, B. K., *The Green Villages of County Durham: a Study in Historical Geography* (Durham, 1977).
- Rogers, J. E. T., *A History of Agriculture and Prices in England from the Year After the Oxford Parliament 1259, to the Commencement of the Continental War, 1793*, 7 vols. (Oxford, 1866–1902).
- Ruiz, T. F., *Crisis and Continuity: Land and Town in Late Medieval Castile* (Philadelphia, 1994).
- Ruwet, J., 'La Mesure de la Production Agricole sous l'Ancien Régime: le Blé en Pays Mosan', *Annales ESC* 4 (1964), 625–642.
- Samper, M., *Generations of Settlers: Rural Households and Markets on the Costa Rican Frontier, 1850–1935* (Oxford, 1990).
- Scammell, J., 'Robert I and the North of England', *English Historical Review* 73 (1958), 385–403.
- Schofield, P. R., *Peasant and Community in Medieval England 1200–1500* (Basingstoke, 2003).
- Selden, J., *The Historie of Tithes* (London, 1618).
- Sharpe, J., 'Tithes', in *Dictionary of Christian Antiquities*, ed. W. Smith and S. Cheetham (London, 1880), pp. 1963–1965.
- Shrewsbury, J. F. D., *A History of Bubonic Plague in the British Isles* (Cambridge, 1971).
- Simiand, F., *Les Fluctuations Économiques á Longue Période et la Crise Mondiale* (Paris, 1932).
- 'Méthode Historique et Science Sociale', *Annales ESC* 15 (1960), 83–119.
- Simpson, R. C., 'The North East Fishing Industry', *Tyne & Tweed* 39 (1984), 11–16.
- Sivery, G., *Structures Agraires et Vie Rurale dans le Hainaut á la Fin du Moyen-Âge* (Villeneuve-d'Asca, 1980).
- Slack, P., *The Impact of Plague in Tudor and Stuart England* (London, 1985).
- Slicher van Bath, B. H., *The Agrarian History of Western Europe, A.D. 500–1850* (London, 1963).
- Smith, R. M., 'Demographic Developments in Rural England, 1300–48: a Survey', in *Before the Black Death: Studies in the 'Crisis' of the Early Fourteenth Century*, ed. B. M. S. Campbell (Manchester, 1991), pp. 25–77.
- 'Some Issues Concerning Families and their Property in Rural England 1250–1800', in *Land, Kinship and Life-Cycle*, ed. R. M. Smith (Cambridge, 1984), pp. 1–86.
- Stenton, F. M., *Anglo-Saxon England* (Oxford, 1971).
- Stephenson, M. J., 'Wool Yields in the Medieval Economy', *Economic History Review* 41 (1988), 368–391.
- Stoianovich, T., *French Historical Method: the 'Annales' Paradigm* (Ithaca and London, 1976).
- Stone, D., *Decision-Making in Medieval Agriculture* (Oxford, 2005).
- 'Medieval Farm Management and Technological Mentalities: Hinderclay before the Black Death', *Economic History Review* 54 (2001), 612–638.
- Swanson, R. N., *Church and Society in Late Medieval England* (Oxford, 1989).
- 'Mr 10 Per Cent: Tithes and Economic Agency', in *Rural Society and Agriculture in the Late Middle Ages*, ed. R. H. Britnell and B. Dodds (forthcoming).
- Thirsk, J., 'The Farming Regions of England', in *The Agrarian History of England and Wales, 4: 1500–1640*, ed. J. Thirsk (Cambridge, 1967), pp. 1–112.
- 'Review of E. Le Roy Ladurie "Les Paysans ..."', *Agricultural History Review* 19 (1971), 178–180.

- Threlfall-Holmes, M., 'Late Medieval Iron Production and Trade in the North-East', *Archaeologia Aeliana* 27 (1999), 109–122.
- *Monks and Markets* (Oxford, 2005).
- Titow, J. Z., 'Some Evidence of the Thirteenth-Century Population Increase', *Economic History Review* 14 (1961), 218–224.
- Unwin, T., 'Rural Marketing in Medieval Nottinghamshire', *Journal of Historical Geography* 7 (1981), 231–251.
- Van der Wee, H., and E. Van Cauwenberghe, *Productivity of Land and Agricultural Innovation in the Low Countries (1250–1800)* (Leuven, 1978).
- Van Zanden, J. L., *The Rise and Decline of Holland's Economy; Merchant Capitalism and the Labour Market* (Manchester, 1993).
- 'A Third Road to Capitalism? Proto-Industrialization and the Moderate Nature of the Late Medieval Crisis in Flanders and Holland, 1350–1550', in *Peasants into Farmers? The Transformation of the Rural Economy and Society in the Low Countries (Middle Ages – 19th Century) in the Light of the Brenner Debate*, ed. P. Hoppenbrouwers and J. L. Van Zanden (Turnhout, 2001), pp. 85–101.
- Wade, J. F., 'The Overseas Trade of Newcastle upon Tyne in the Late Middle Ages', *Northern History* 30 (1994), 31–48.
- Watkins, A., 'Cattle Grazing in the Forest of Arden in the Later Middle Ages', *Agricultural History Review* 37 (1989), 12–25.
- Watson, J. A. S., and J. A. More, *Agriculture: the Science and Practice of British Farming* (Edinburgh, 1945).
- Watts, V., and J. Insley, *A Dictionary of County Durham Place-Names* (Nottingham, 2002).
- Wharam, A., 'Tithes in Country Life', *History Today* 22 (1972), 426–433.
- Whittle, J., *The Development of Agrarian Capitalism: Land and Labour in Norfolk, 1440–1580* (Oxford, 2000).
- Winchester, A. J. L., *Landscape and Society in Medieval Cumbria* (Edinburgh, 1987).
- Wolf, E. R., *Peasants* (Englewood Cliffs, New Jersey, 1966).
- Woodward, D., *Men at Work: Labourers and Building Craftsmen in the Towns of Northern England, 1450–1750* (Cambridge, 1995).
- Wright, G., and H. Kunreuther, 'Cotton, Corn and Risk in the Nineteenth Century', *Journal of Economic History* 35 (1975), 526–551.
- Yun Casalilla, B., 'Economic Cycles and Structural Changes', in *Handbook of European History in the Later Middle Ages, Renaissance and Reformation, 1400–1600*, ed. T. A. Brady, Jr., H. Oberman and J. Tracy (Leiden, 1994), pp. 113–46.

Unpublished theses

- Blanchard, I. S. W., 'Economic Change in Derbyshire in the Late Middle Ages, 1272–1540' (unpublished Ph.D. thesis, University of London, 1967).
- Dodds, B., 'Tithe and Agrarian Output between the Tyne and Tees, 1350–1450' (unpublished Ph.D. thesis, University of Durham, 2002).
- Halcrow, E. M., 'Administration and Agrarian Policy of the Manors of Durham Cathedral Priory' (unpublished B.Litt. thesis, University of Oxford, 1949).
- Larson, P. L., 'Conflict and Compromise in the Late Medieval Countryside: Lords and Peasants in Durham, 1349–1430' (unpublished Ph.D. thesis, Rutgers, The State University of New Jersey, 2004).
- Lomas, R. A., 'Durham Cathedral Priory as a Landowner and a Landlord, 1290–1540' (unpublished Ph.D. thesis, University of Durham, 1973).

- Lomas, T., 'Land and People in South-East Durham in the Later Middle Ages' (unpublished Ph.D. thesis, Teesside Polytechnic, 1976).
- Stone, E., 'The Estates of Norwich Cathedral Priory, 1100–1300' (unpublished D.Phil. thesis, University of Oxford, 1956).

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